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APPENDIX

TO

THE HORSE,

AS PUBLISHED BY THE

SOCIETY FOR THE DIFFUSION OF USEFUL KNOWLEDGE.

DESIGNED TO ADVANCE THE WORK

TO

THE PRESENT STATE OF VETERINARY SCIENCE.

BY

W. C. SPOONER, M.R.V.C.

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APPENDIX;

DESIGNED TO ADVANCE THE WORK TO THE PRESENT

STATE OF VETERINARY SCIENCE.

PREFATORY REMARKS.

THE extensive sale which this work has received during the eighteen years it has been before the public, affords the best possible evidence of the high estimation in which it has been held. The interest that is always attached to the subject of the work, the easy and familiar style in which it is written, the agreeable manner in which important truths have been impressed, dry subjects relieved, and good principles inculcated, are merits which sufficiently account for its popularity. While, however, the history of the horse remains the same, and there is but little to be added to our previous knowledge of his anatomical structure, the science which relates to the diseases of the animal has not stood still. Many minds have been devoted to the subject, old experiments have been repeated and new ones tried, principles have been tested, and truths, or what were considered as such, have been re-examined, so that it is hard if, with all this, some improvement has not been made. It is with this view of the matter that we have limited our Supplement to the more practical part of the work, that relating to Pathology: by so doing we have brought it up to the present state of Veterinary science, and, we trust, enhanced its value in no trifling degree, so far as utility is concerned. We could readily have enlarged the Appendix by extending our observations to the other portions of the work, but at the risk of distracting the attention of the reader without adding to the real value of our labours.

We have spoken of the merits and attractions of the work—we may also notice its errors. In the wish to render the subject clear and simple, the author has occasionally overstepped the mark, and represented things as far easier than actual experience will justify; and he has also spoken of many diseases as if the reader, with the superficial knowledge books alone are capable of imparting, were competent to treat them. It is a trite saying, that a man who defends his own case has a

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fool for his counsel. We doubt very much whether he has a much better claim for wisdom when he attempts to treat the diseases of his own horses. Bad, however, as this practice is, it is infinitely preferable to that of employing an ignoramus, as is too frequently the case; a man, perhaps, totally ignorant of the principles of medicine, the anatomy of the animal, or the very rudiments of science. The information afforded by this work will enable the owner of horses to discriminate between the man of science and the mere empiric.

The writer, in the course of many years' experience in his profession, has found almost invariably that the man who has had the greatest experience of horses is most diffident of his own knowledge as to the diseases of the animal. He has now in his eye three individuals, one a trainer of race-horses, another a large coach proprietor, and the third an extensive dealer in horses, each highly respectable and well-informed in his respective department, and each possessing an experience of some twenty-five to thirty years, and yet neither of them would presume to treat a horse labouring under disease, or trust to his own judgment in the matter. Yet, during the period of his acquaintanceship with them, the writer has met with many a young gentleman or pseudo-sportsman in his first scarlet coat—many a shopkeeper fresh from the counter—and many a groom whose experience has never extended beyond some twenty horses, who have not hesitated to give their opinions on the diseases of horses with the utmost confidence, or to pit their judgment against that of the regularly educated veterinary surgeon. It is a point of honour with many shallow-brained individuals never to acknowledge their ignorance of any matters relating to the horse, regarding with the utmost asperity any impugning of their knowledge of horse-flesh. Such gentlemen (when they are gentlemen) afford very excellent prey for horse-chaunters and low dealers, to whose company, indeed, they are extremely partial. They would seem to illustrate the adage, that "a little knowledge was a dangerous thing;" but in our opinion it is not the little knowledge which is so dangerous, but the small modicum of judgment with which such knowledge is too frequently applied.

To return, however, to our subject, it is hoped that the many thousand purchasers of "The Horse" may find in the present Supplement the means of rendering the work complete; so that, to speak medicinally, by the transfusion of a little fresh blood, new vigour may be imparted into the frame of the old Horse; and that, instead of being laid entirely on the shelf, or confined permanently to his *box*, we may find that he has still a *new race* to run.

APPENDIX.

(1.) PAGE 101.—DISEASES OF THE BRAIN.—MEGRIMS, &C.

HORSES are not particularly liable to diseases of the brain; far less so than the human subject, in whom a formidable batch of maladies, denominated mental diseases, are met with. Disease of the brain is oftener found in sheep, and carries off annually a considerable per centage of these animals. One of the most common affections of the brain in the horse is the *Megrims*, which has been treated of in the text. It is supposed to arise from sudden determination of blood to the head. It is certainly the case that this disease is most prevalent in the spring, and amongst fat plethoric subjects; and therefore we may justly conclude that a determination of blood to the brain is the cause in many instances. There are others, however, in which the symptoms border on *epilepsy*, and appear to arise from disordered functions of the brain. Young horses are rarely affected with these cephalic diseases, which are generally confined to old subjects. Small animals are more subject to these complaints than large ones, and we have found that neither heavy cart, nor thorough-bred horses are so liable as others. Such is the susceptibility sometimes, that any sudden alarm will cause the animal to reel and fall backwards.

We have known some horses more liable to this disease in very cold frosty weather; in such instances the symptoms have been those of giddiness, without the severity of ordinary megrims; the animal has reeled, however, like a drunken man, and been extremely dangerous both to ride and drive. We have known an old horse thus continue almost useless throughout the winter, and gradually shake off the disease as warm weather came on. Now, it must be evident that the exciting causes in such instances must be altogether different from that of ordinary megrims; and, whilst the bleeding and purging are very proper, as recommended in the text for ordinary megrims, arising from plethora, it is not to be advised for that variety of disease to which we have called attention, and which is rather to be benefited by warmth, good grooming, and tonic medicine.

(2.) PAGE 102.—APOPLEXY.

Horses can scarcely be said to be liable to *Apoplexy*, as it exists in the human subject, although we have known death produced almost suddenly, in which it has been found that there has been a rupture of some small vessels on the brain. A case in point occurs to our recollection. A young mare, in plethoric condition, was working in a field with some cart horses, when suddenly she started off, galloped furiously round the field several times, then fell, and died almost immediately. On examining the body, no disease could be detected, but a small blood-vessel had ruptured, and about half a tea-spoonful of coagulated blood was found on the *medulla oblongata,* thus pressing on the origin of some of the most important nerves.

With this exception, and that of megrims before spoken of, we know of no disease resembling the apoplexy of the human subject.

(3.) PAGE 105.

With regard to those diseases which come under the denomination of staggers, we have, certainly, three varieties, though neither of them are so prevalent as they were formerly.

Mad staggers is undoubtedly inflammation of the brain, and is characterised by those symptoms of extreme violence spoken of in the text. These symptoms may be preceded by the sleepy stage, or may occur without it. In sleepy staggers, as it used to be called, one of the most striking symptoms is a disposition to thrust the head forwards, and it is surprising with what force and determination this will be done. Thus resting his head the horse will doze for hours. Now, there are certainly two diseases presenting these symptoms. One, which has been denominated stomach staggers, arises from distention of the viscus with food. Such is the sympathy between the stomach and the brain, that distention of the former will produce very similar symptoms to that when the brain is primarily diseased. We are, however, very much in the dark as to whether distention of the stomach with food is a cause or an effect; that is, whether it is caused by indigestion arising from a want of tone in the nervous system, or whether distention of the stomach with food is at once the cause of all the other symptoms.

Stomach staggers used formerly to be very prevalent, particularly amongst farm horses, and could, in many instances, be traced to the practice which then prevailed far more than at present of continuing the horses at plough from morning till almost night without any food, and then allowing them to gorge their stomachs, thus debilitated by fasting, with dry and comparatively indigestible food. In this disease there is a very great disposition to force the head forwards, the pulse is slow and oppressed, and the abdomen generally distended, the bowels costive, and the dung usually slimy. This distention of the stomach is the principal distinction between this affection of the stomach and the sleepy staggers, as it is called, which is primarily a disease of the brain. In this latter complaint, however, which is now very uncommon, there is less disposition to thrust forward the head, and the abdomen is by no means distended. This disease is often endemical, prevailing very much in particular localities. Mr. White speaks of its ravages in Wales some years ago; and I have known it occur on a farm in my own neighbourhood, where the cattle were rather neglected, and where the land was much infested with weeds, such as the wild poppy and the wild chamomile, or *morgan,* as it is provincially termed. To these deleterious plants I am disposed to attribute the disease which attacked several young horses, and gradually and slowly terminated fatally, the animals becoming by degrees weaker and poorer. In the cases which came under my care I succeeded in effecting a cure, principally by means of tonic medicine, alternated with mecurial alteratives.

Sleepy staggers is sometimes suddenly succeeded by mad staggers or inflammation of the brain; the symptoms of which are sufficiently detailed in the text. It is important to distinguish between these different diseases, as the treatment requires considerable modification.

Mad staggers, the symptoms of which are so extremely violent, must be met by the active bleedings and purgatives recommended in the text.

I would not, however, recommend the same active blood-letting for the stomach or the sleepy staggers, as in these diseases there appears a want of that nervous energy and excitation which abounds so much in the mad staggers, and which blood-letting is calculated to depress. In the stomach disease, oily purgatives and clysters, assisted by plenty of diluents, are called for; and, in those cases where lethargy and debility are present, tonics and mild stimulants are to be recommended.

I have never observed any connection to exist between staggers and amaurosis; the latter, it is true, may be caused by indigestion, but I have never met with an instance of its being produced by staggers.

(4.) PAGE 105.—TETANUS.

We have little or nothing to add to the lucid description of this dreadful disease, as it appears in the text; and we are sorry to add that the progress of science will afford us little additional assistance in our curative measures. Successful treatment is principally confined to those cases in which the spasm is not universal, but confined to one part, as the neck or jaw, when it is denominated *trismus*. Purgatives, opiates, and antimonials, form, with blood-letting, the principal curative measures; but it should be borne in mind that, beyond all these, perfect quietude, and the absence of all excitement, is most essential. The animal should therefore be left alone as much as possible, without being harassed by frequent visits, and the exhibition of medicines.

(5.) PAGE 108.—EPILEPSY.

These cases, which border on megrims, may be referred to our notes on this disease.

(6.) PAGE 108.—PALSY.

Hemiplegia, or palsy of one side of the body, is extremely rare in the horse. Palsy of the hind extremities, or paraphlegia, is that most usually found. We have never experienced a case of its following inflammation of the bowels or the sudden cessation of purging; but it usually proceeds from an external injury, such as a fall or slip on the pavement, or from casting. In these cases, the spine is usually fractured, and presses on the spinal cord, or a blood-vessel is ruptured, and the blood effused on this important part. In such instances as these it is useless to attempt a cure, but the animal should be relieved from his sufferings as soon as possible. In other instances there may not be an actual fracture, but the spine may still be considerably injured, and then the animal becomes, as it is termed, chinked in the back, losing the capability of backing and much of the strength of the loins. There are various degrees in these cases, some horses being perfectly useless, and others capable of a tolerable amount of work. I have known singular results, such as a horse being capable of carrying a rider, but going as it were disunited, trotting with his fore legs, and cantering with his hind ones. When the spine has been thus injured, the horse always flinches when pressed on the loins, and also when mounted. Old horses are much more subject to these spinal injuries than younger ones, in consequence of the back being frequently anchylosed; that is, the bones of the spine being united by ossific matter, flexibility is destroyed, leaving no means of warding off concussion. When the back has been fractured in casting, it has usually been found that the spine had been previously in this anchylosed state.

With regard to the treatment of these cases moderate bleeding and purging are desirable, with the application of fresh sheep-skins to the loins, and followed by blisters and charges.

(7.) PAGE 109.—RABIES, OR MADNESS.

It is only necessary to observe on this subject that in the horse, unlike the dog, there is frequently manifested a considerable dread of water (*Hydrophobia*); and that, when once the symptoms of this disease are decidedly manifested, the animal should be immediately destroyed, as we are not warranted in trifling with the lives of the attendants by trying vain and fruitless experiments.

(8.) PAGE 110.—NEUROTOMY.

This operation appears to have been first performed by Mr. Morecroft; but the first case having proved unfortunate from other causes, only partially connected with the operation, it does not appear that Mr. Morecroft thought very favourably of it. The merit of having introduced neurotomy generally, is certainly due to Professor Sewell; for if Mr. Morecroft performed the first actual operation, Mr. Sewell may be said to have performed the first successful operation, in which its practicability was demonstrated by the animal becoming actually serviceable. The operation has sometimes fallen into disrepute from having been performed on improper cases, or from the horse having afterwards been unduly worked. It should never be performed on a weak, flat, or convex foot, as the danger from concussion, pricks from shoeing, and other injuries, is great, and is still further increased by the operation in question. It also should not be performed for diseases of the fetlock joint, nor when the feet are exceedingly contracted; for, in the former case, the inflammation of the fetlock will soon extend above the seat of operation on the renewal of work; and, in the latter case, the disposition to expansion will be so great from the horse treading boldly on his heels, that inflammation will result from the pressure of the soft parts against the horny crust, and enlargement and disorganization will be likely to follow. The best cases for the operation are those where the foot is strong and but little contracted. The horse should be worked moderately and steadily afterwards, either at a foot pace or a steady trot. He should not be used for hunting; as, in alighting from a leap, the diseased sinew, in passing over the navicular bone, to which it often becomes morbidly united, sometimes snaps or ruptures, and the horse is rendered useless. For the same reason, the horse should not be turned out to grass, as the same result may happen from playfulness. A result which sometimes attends this operation is, that when the horse has been previously disposed to overreach or clack his hind shoes against his fore ones, this disposition is afterwards greatly increased, from the leg operated on not being moved out of the way of the hind leg so rapidly as it should be. Mr. Simpson, some years since, related a case in which the disposition to overreach was so greatly increased, and the horse cut and bruised the heel so much, that it was thought desirable to destroy him, under the idea that he would never be of any service. A case somewhat similar came under my own notice some three years since; a fine chesnut horse belonging to the writer's brother, a surgeon, was operated on for navicular disease of two years' standing, attended with severe lameness. The horse had been rather disposed to clack previously, when trotted on the turf, and on driving him a few miles a month after the operation, his heel was covered with blood, and large wounds were made by the shoe of the hind foot. Some leather was riveted to the heels of the shoe, so as to afford protection to the heel; but on sending the horse home a distance of forty miles, being ridden too fast by the groom, the leather was cut through, and the heel again dreadfully lacerated, and the leg so battered and injured, that a considerable enlargement took place, and the horse promised to become completely useless. However, conceiving that much of this mischief was produced by the weakness of the animal, from being thrown out of work and condition at the moulting season, I recommended fomentation and other cooling measures, which were continued until the inflammation was abated, and the wounds healed. After this, the horse was gradually got into condition by means of walking exercise, good grooming, and proper feeding; and the sequel is that he has been in constant work in harness, and with the saddle, for upwards of three years. I mention the case as there is none similar on record except that previously alluded to; and also to show that a horse need not be abandoned, even though overreaching may occur after the operation. Neurotomy is usually performed a few inches above the fetlock joint. Some novices have performed it midway between the fetlock joint and the knee, and been much surprised to find that the lameness still continued, which was owing to the fact that the outer metacarpal nerve sends off a branch which passes obliquely over the back sinews, and joins the other several inches lower down; so that the section is made on one side below the place where the branch nerve leaves, and on the other above the spot where it joins the nerve; thus feeling is readily kept up by means of this branch nerve. Sometimes the operation is performed below, or immediately upon, the fetlock joint; the effect of which is, that feeling is preserved to the front of the foot by means of two small branch nerves which are given off above the fetlock joint, whilst the navicular joint is deprived of all feeling. This would be a very desirable mode of performing the operation, were it always successful; but it often happens that, after some time, lameness again follows from the mischief extending itself within the sphere of the nerves that remain. In some instances, however, where the disease is entirely confined within the navicular joint, the horse has continued sound, and still preserved a certain degree of feeling. Another mode of operating is, to excise the nerve on the inside above the fetlock, and, on the outside, upon it; by which means a slight degree of feeling is preserved on the outside and front of the foot, and there is no danger of injury from cutting, which is the case when the operation is performed immediately on the fetlock joint on both sides of the leg.

(9.) PAGE 112.—COMMON INFLAMMATION OF THE EYE.

Unless this disease is connected with influenza, or some other malady affecting the whole system, it is usually produced by external violence, and, in nine cases out of ten, it is possible to distinguish between it and specific ophthalmia. When inflammation of the eye is caused by a blow, there is, in addition to swelling of the lids, and a large effusion of tears, a considerable dimness or opacity on the surface of the eye, whilst at the same time the interior is comparatively free from disease. In specific ophthalmia, there is a greater amount of disease in the interior of the eye, and little, if any, opacity of the cornea.

When inflammation of the eye is connected with influenza, there is much swelling of the lids, and a great flow of tears, whilst the eye itself is tolerably free from injury; and, when it proceeds from a cold, there is usually a thick matter, or mucus, discharged from the corners of the eye after the first day or two. A cut from a whip generally leaves a streak on the surface of the eye (unless the injury is sufficient to involve the whole surface), and this streak sometimes becomes permanent.

(10.) PAGE 113.—SPECIFIC OPHTHALMIA.

Although the more serious disorders of the eye are usually included under the above designation, and although the result is more frequently unfavourable than otherwise, yet there are several varieties of disease affecting different parts of the eye, varying also both in the rapidity and virulence of the attack, and equally so with regard to the ulterior and permanent injury inflicted.

I have known total blindness succeed a single attack of ophthalmia in one case, and in another, eight years and upwards has elapsed between the first attack of inflammation and the ultimate loss of vision. These different results depend principally on the particular part attacked. Thus, if the iris is affected, we have a considerable amount of irritability, the greatest susceptibility to light, and yet, at the same time, the general inflammation is but moderate. In such instances it is usually a long time before the sight is entirely lost; and we have known the result to be, that the iris has appeared as if torn, and thus it has remained, the eye still possessing a certain amount of vision, and continuing free from subsequent attacks. Such cases, however, are rare. It is very desirable to be able to prognosticate, in a case where one eye loses its vision, whether there is a probability of the other retaining it or not. In the majority of cases both eyes become affected, though not in the same degree, nor at the same time; and when each eye has had several attacks, the probability is, that the animal will become totally blind. Where, however, one eye only has been affected, and in that, after the first or second attack, a complete cataract has occurred, there is then every probability that the other eye will continue unimpaired. Sometimes the humours of the eye, or rather the membranes which secrete them, are the seats of disease, and then the disorganization of the eye is very great, as well as rapid, although the irritability of the eye during the attack may not appear to be considerable. In such cases, a thick bloody fluid takes the place of the transparent liquid previously existing, and the whole appears after a while as one mass of disease, of a muddy brown colour. In some instances the envelopments give way, and the eye shrinks and becomes a very unsightly object.

With regard to the causes of these diseases, we agree with the author in ascribing much to the ammoniacal fumes which escape from the urine, to which we would add high stimulating food and great exertion in harness. We believe, also, that improved stabling and better ventilation has lessened the frequency of these ocular cases. Horses with small *pig* eyes are much more liable to ophthalmia than those with large prominent eyes; and thus, as the former are more frequently found with horses deficient in breeding, it may account for the opinion which is popularly entertained, that black horses are more liable to blindness than others, these horses being generally deficient in breeding.

With regard to the treatment of these diseases, we have little to add to that detailed in the text. Inflammation is the leading feature in all, and therefore should be met by active antiphlogistic treatment. An active dose of physic should be given, as soon as the horse is prepared, by mashes; and, in the meantime, three or four quarts of blood should be taken from the neck, on the same side as the affected eye. The eyelids should also be scarified, then well fomented with warm water; after which we have derived great assistance from putting linseed poultices, in linen bags, on the eyes, by means of leather blinds. These should be continued during the day, and may serve as the vehicle for the application of opiate or goulard lotions, which, applied in the usual way, are but of little service. By this prompt and active treatment a great deal of good can be accomplished, and the loss of sight may be greatly postponed. It is useless to attempt half measures; we should either treat actively or not at all. After the violence of the inflammation has subsided, much benefit may be obtained by putting a few drops of the wine of opium into the eye twice a day.

CATARACT.

Cataract may be either partial or complete; and again, it may either succeed the violent disease before spoken of, or it may gradually come on with very little previous inflammation. It admits also of another important division. It may be either a cataract of the lens itself, or merely of the membrane which covers it. The latter may come on without any noticeable inflammation; appearing as one or two small specks in the centre of the eye, about the size of a pin's head. It is very important to distinguish between these different kinds of cataracts, inasmuch as, whilst the former is irremovable, the latter is very frequently absorbed without any external treatment. Whilst the former is often pearly white, and completely opaque, so far as it exists, the latter is gray and less opaque. It requires a considerable amount of tact, as well as experience, to discover these small incipient cataracts, and to discriminate between the one kind and the other.

(11.) PAGE 116.—GUTTA SERENA.

This disease is sometimes connected with diseased liver, particularly a rupture of its coats, when the blindness may shift from one eye to the other. Although this disease is generally but little under the influence of treatment, we have met with successful cases in young animals. The treatment should principally be directed to the removal of the cause which produces the disease.

(12.) PAGE 121.—NASAL GLEET.

It is exceedingly rare that the nasal discharge is ever so profuse as that described in the text, unless produced by strangles or severe catarrh or glanders, nor is it brown or bloody, unless connected with other active disease. It is, indeed, very rare, and is usually of a gray colour and free from smell, and seems to arise from a relaxation of the secreting membrane of the nostrils. It should be treated by tonics internally, assisted by good feeding and grooming.

When a nasal gleet is attended with much offensive smell, we may rest assured that it is not glanders, but that it either arises from external injury, or may be justly included under the designation *Ozæna.*

This is a rare disease in a horse, and is generally produced by catarrh, particularly that of the epidemic kind. The discharge is usually thick, considerable, and very offensive; and the ulcers may readily be detected on the surface of the membrane, and are sometimes numerous and deep, involving the cartilage under the membrane. The treatment should consist of tonics, internally and externally, fumigations of chlorine gas by means of Read's inhaler, or with the common nose-bag; or, if this does not succeed, a solution of the chloride of lime may be syringed up the nostrils every day, or may be alternated with a weak solution of the sulphates of zinc and copper, and applied in the same manner.

Nasal gleet, attended with fetid smell, and proceeding from one nostril only, is usually produced by some blow, or external injury. This disease, as it may be called, very much resembles glanders, and has often been confounded with it; indeed, it requires some tact to discriminate between the two.

A case in point some time since occurred in the writer's practice. He was sent for to examine two horses belonging to a high personage, both of which exhibited symptoms of nasal discharge from one nostril, and of a suspicious character; one in particular was regarded as far worse than the other, in consequence of the greater profuseness of the discharge, and its offensive character. The result of the examination, however, was to condemn the animal that was thought the best, and he was accordingly shot, whilst the other horse was merely kept and worked separate from the rest. Suitable treatment was applied to the latter, both with regard to medicine and diet, and, in the course of some eight or ten months, the discharge disappeared.

In the latter instance the disease was no doubt produced by a blow, which, injuring the bones of the nostrils, caused the offensive discharge. The treatment consisted in the administration of tonics internally, and the application, externally, of the astringent lotions before recommended.

We have little doubt that very many such cases have been mistaken for glanders, and the animal has been destroyed in consequence. Indeed, within the last few months, the writer went a considerable distance to examine a horse that was considered to be glandered by the veterinary surgeon in attendance, but he pronounced a contrary opinion, which the subsequent history of the case has fully justified.

NASAL POLYPUS.

Sometimes, though very rarely, a fleshy tumour forms in one of the nostrils, and adheres to the turbinated bones, being fixed at one extremity by a narrow attachment, and otherwise floating loosely in the nasal cavity. It becomes, of course, a considerable obstruction to respiration, and should be removed, if possible, by an operation.

Still more rarely we find a bony tumour forming in the nostrils, nearly obstructing all passage, and causing a discharge somewhat resembling that of glanders.

This, like the former, should be removed, if possible, by an operation.

(13.) PAGE 121.—GLANDERS.

This very fatal disease is not so common as it once was, which is, no doubt, to be attributed to the better stable management of the present day, and, perhaps, in some measure to the improvement of the roads; for nothing has so much increased the virulence, and extended the ravages of this dire disease, as the circumstance of horses being overworked. The poison of glanders, which, in able and robust horses, may be effectually resisted for a considerable time, finds in the overworked horse a congenial soil, on which it grows, and spreads with the rankest luxuriance. Thus, in a stock of coach horses, whose usual hard work has been greatly increased by the badness of the roads, glanders sometimes makes its appearance, and a good portion of the stock die off like so many rotten sheep. The disease then becomes connected with farcy and inflammation of the lungs. In the majority of instances in which the disease has proved so destructive, it can usually be traced to one particular animal, whose symptoms have appeared so trivial as for a long time to escape notice. The writer can recal to his mind very many practical illustrations of this fact. It is, therefore, this slight but insidious form of the disease that requires our closest attention. The very last instance that came before our notice afforded a striking proof of the deceptive appearance of the disease. A gelding from the stables of a gentleman was sent to the infirmary of the writer, affected with farcy, which, though it at first appeared to give way under treatment, at length extended itself over the system, and became connected with glanders of the acute kind, for which the animal was destroyed. A second case also became glandered, after which a mare was sent to be examined or attended for a slight cold, though of some standing, as it was thought. There was a slight discharge from the *off* nostril, which increased with exercise; the mare looked unthrifty in her coat, and there was on the off-side of the jaw an indurated swelling of the gland about the size of a small bean—so small, that it would have escaped the attention of most people. The mare fed well, and was even hunted, but did not seem quite up to the mark. On inquiry into the history of the case, it was found that these symptoms had existed for some months, but were regarded as too trivial to require attention. No hesitation was felt in deciding, after a careful examination, that this mare was the origin of the evil, and the cause of the disease in the other horses; but, wishing to gain some corroborating testimony, we inoculated a donkey with the usual discharge from the mare, and in the course of a week both glanders and farcy were developed in the little animal, although the mare continued in the same state as before, in which she would have continued, perhaps, for months or years, had she been permitted to live. It is almost impossible to make the groom or attendants believe the fact, that an animal so slightly affected can be glandered; and, consequently, many deceptions have been practised on the unwary. I once knew a mare affected with chronic glanders, that proved a source of considerable income to a roguish horse-dealer. She was brought to me to examine, after being purchased for twenty pounds, and I pronounced her to be glandered. The mare was an extremely active, useful kind of animal, and the purchaser thought he had a bargain. By my advice he, after travelling many miles, discovered the seller, who, after some words, offered to take the mare for ten pounds, which was agreed to, on the principle that the first loss was the least. Some time afterwards the mare was again brought to me under similar circumstances, and I then discovered that it was the regular practice of the roguish dealer to sell the mare as high as he could, and then to take her back at about half price, so that she really afforded him a very considerable profit.

It is these chronic, and apparently slight cases, that enable dishonest parties to practice such deceptions. The nostrils being pretty well cleaned out previous to the animal being offered for sale, and the animal being able to bear a trial, the unwary purchaser is thus easily deceived, and if he has a stud of horses, often cruelly injured. Some few years since a chesnut horse was brought to the writer, and was pronounced decidedly glandered. Instead of being destroyed, as he ought to have been, he was sold to a roguish horse-dealer for five pounds. An ignorant farrier declared that the horse was not glandered, and engaged to cure him. Some weeks afterwards the owner and his son, personating the characters of a sporting gentleman and his groom, and dressed accordingly, took the horse to a garrison town, and sold him to an officer for a good round sum. The next account we heard of the horse was many months afterwards, when we were again consulted by his then owner, who had purchased him some time previously, and used him with his other horses, several of which became glandered in consequence.

These cases are mentioned to show that the principal danger from glanders arises from these apparently slight cases. In acute glanders, when the discharge is profuse, and the glands under the jaw as large as hens' eggs, there is no mistaking the case, and, consequently, proper precautions can be taken. This shows how important it is when purchasing horses to have them properly examined by a competent professional man. There is no money better laid out than the usual ten shillings fee for the examination of a horse with regard to soundness.

The contagious character of glanders is very well known, and not only is it so with regard to the horse, but it is capable of being communicated to the human being; and, indeed, there have been very many deaths from this cause, and most horrible deaths they are. It is generally by means of some cut or abrasion which comes in contact with the glandered matter, that the infection is communicated. The utmost caution should, therefore, be exercised by the attendants; and it is most unpardonable to keep glandered horses any length of time for the sake of their work; and we are scarcely justified in tampering long with them under the idea of effecting a cure, when the cases are decidedly glandered.

It cannot be too generally known that it is illegal to expose a glandered horse for sale, and though it is a law but seldom enforced, yet we are glad to find that it has lately been tested in London, and with success. At the London Sessions, William Duckwell was indicted for having exposed in Smithfield market, on the 15th October, 1847, a mare, he knowing her to be suffering under the visitation of the disease called glanders. Mr. Laurie in stating the case said, that the present prosecution had been instituted by the corporation of the City of London, under the full conviction that if the practice of the commission of which the defendant was accused were to be permitted to be carried on, it was impossible to calculate how lamentable, how extensive, or how fatal might be the results.

The case was proved by various witnesses.

Mr. Payne, for the defendant, contended that he was ignorant of the fact of the mare being glandered, and was merely employed by his master to sell the mare for three pounds ten shillings. He called several witnesses to prove that the symptoms prior to the mare being destroyed were not of a decided character; but, notwithstanding this, the jury brought in a verdict of guilty; and the Recorder sentenced the defendant to pay a fine of ten pounds, which sum was paid by his master.

During the succeeding month, too, a man was also committed for trial for exposing a glandered horse for sale in Smithfield.

With regard to the cure of glanders, it is a matter of considerable doubt whether those cases that have been reported to have been cured were really cases of true glanders or not. When we know that there are instances of nasal gleet that simulate glanders so much, we are rather inclined to the idea that the cured cases were those of the latter description.

(14.) PAGE 128.—FARCY.

The cure of farcy materially depends on the extent to which the constitution is affected by the disease. If it be confined to a single extremity, particularly one of the hind ones, or if the superficial absorbents are alone affected, there is then a very reasonable prospect of establishing a cure. The application of the caustic, as advised in the text, is very proper; but we may also materially assist the case by rubbing into any swollen part, or along the course of the absorbents, an ointment consisting of

Iodine	ʒ1
Lard	℥1
Mercurial ointment	℥1

to be incorporated together.

Advantage will also be felt by the internal exhibition of five to ten grains daily of hydriodate of potash in combination with a mineral tonic, such as sulphate of iron, three drachms, and gentian, two drachms. The ointment as well as the ball must be continued for some time.

We have succeeded in many cases by this mode of treatment, though it must be acknowledged that there is no disease, to which the horse is liable, so deceptive as this. When the external symptoms are most favourable, the ulcers healed, and the swelling reduced, the disease will sometimes break out again, and prove rapidly fatal.

(15.) PAGE 134.—LAMPAS.

It is almost impossible that the swelling of the bars of the mouth, denominated lampas, can interfere with the process of mastication, when the horse is in the stable and feeding on grain, for we well know that the food is ground as in a mill, by the *molar* teeth. It often happens, however, that, connected with this lampas, there is an inability to masticate properly; the horse quids his food, as it is called, that is, throws it out of his mouth in rolls covered with saliva. On the same principle as " Tenterden steeple being the cause of Goodwin sands," the lampas has been regarded as the cause of this imperfect mastication. If we look farther, however, we shall almost invariably find that the gums are swelled generally, and particularly the membranous tissues covering the lower jawbone, between the molar and incisor teeth; so much so, that when the horse attempts to masticate, this membrane gets between the molar teeth and causes pain, and interrupts the process of mastication. This state of the parts is often overlooked, and the horse becomes weak and thin, from not having sufficient nutriment. The disease, if it can be called so, is commonly termed the Bags, or Washes, and is relieved by cutting off a portion of the membrane by means of a pair of scissors; the bleeding relieves the inflammation, and the cicatrization of the wound causes the membrane to contract, so as to be put out of the way of further injury from the teeth. The horse should have mashes for some days after the operation, and care must be taken that the bit does not injure the denuded part.

(16.) PAGE 137.—THE TEETH.

We have little to add to the long chapter on the changes of the teeth, as denoting the age of the horse, as it appears in the text. It should, however, be borne in mind, that although the rules given, particularly as regards the marks, are pretty correct as general rules, yet there are various exceptions, showing that the change cannot always be depended on. Sometimes the marks continue for very many years; and we have known a horse at twelve years old exhibit the same appearance as another at six. In such instances the age must be judged of by the length and shape of the teeth, and more particularly by the shape of the faces of the teeth. In other cases the mark disappears much sooner than usual, and in some few instances is altogether absent. I have at present a horse six years old whose lower incisor teeth display no marks, and are so extremely narrow, from the front to the back part, that there is no room for the cavity which forms the mark. A hasty observer would be disposed to regard the animal as at any rate an aged horse, which, however, is not the case.

It is observed in the text, and it is also a subject of general supposition, that the teeth are developed much earlier in young animals that are corn-fed, and taken early into the stable, and that in thorough-bred horses, consequently, the changes of the teeth are earlier than in animals that remain more in a state of nature. A careful examination, however, leads me to believe that these notions are all founded in error, and that, so far from thorough horses being forward in their mouths, they are, if anything, somewhat backward, for I have examined many two, three, and four year old colts, and, although they were foaled some months earlier than other horses, their teeth were not more advanced than others of the same year that had been continued at grass. If we bear in mind that the incisor teeth are more particularly used in nipping the grass, and are thus much more employed in a state of nature than in the stable, there is some reason to suppose that domestication rather tends to retard than assist the development of the permanent incisor teeth; and at any rate it explains the fact that the teeth are not earlier developed in thorough-bred than in other horses. Many attempts have been made, and many no doubt with success, to run four-year old horses for the Derby, for which race three-year olds only are allowed to enter. The last instance of the kind is the celebrated Running Rein affair, which obtained such notoriety, and which induced considerably more attention to be paid to the mouths of race horses than was previously the case. An incisor tooth, when it is first shed, and for some time afterwards, is higher on the outer or front edge than the inner or back edge. After some time, this outer edge is worn down to the same level as the inner, and, subsequently, both edges wear equally, till the bottom of the hole which forms the mark is reached, when, of course, the mark disappears. It takes about three years to effect this process, that is, from the time the tooth is cut to the disappearance of the mark. In a four-year old mouth, there are four permanent lower incisors, and two corner temporary teeth. The outer and inner edge of the central teeth are tolerably level, and the mark smaller than the middle teeth next them, which present the appearance of younger teeth. Now, in a three-year old mouth the central teeth have a younger appearance, the mark being larger, and the outer edge higher, than the inner, whilst the middle teeth are either in the act of being cut, or the temporary teeth have not yet disappeared. By careful examination, therefore, the difference between a three and four year old horse can be readily detected. The permanent teeth differ from the temporary, being larger, less white, and having more depth above the gums.

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After the marks have disappeared, the age of the horse may be judged partly by the shape of the faces of the teeth, and partly by the horizontal position in which the teeth proceed from the jaw. If we take a young incisor tooth and saw it off below the bottom of the hole which forms the mark, and again at a similar distance lower down, we shall find that the several surfaces made by the sections resemble the shape of the face of the tooth in a horse in which a similar quantity of the tooth has been naturally worn down. The comparison also holds good with regard to the direction in which the teeth proceed from the lower jaw, being in the young animal upright or curved, and in the old one nearly horizontal. Although the teeth grow to supply the loss of that which wears away, yet the original shape remains, so that the face of an incisor tooth at different periods is owing to that particular part which, in its turn, reaches and forms the surface.

(17.) PAGE 140.—WOLVES' TEETH.

Although irregularities of the teeth sometimes occur, as mentioned in the text, yet the wolves' teeth are generally two very small supplementary teeth appearing in front of the molar teeth; and, though supposed to have an injurious effect on the eyes, we have rarely, if ever, found that they produce any injurious effect, either on the eyes or the mouth, and, consequently, it is useless to interfere with them. When, however, the teeth grow irregularly, the permanent ones appearing by the side of the temporary, the latter should be removed.

(18.) PAGE 146.—DISEASES OF THE TEETH.

Although, as compared with the human teeth, those of the horse are rarely subject to disease, yet occasionally this is the case, and the animal suffers considerable pain, and loses flesh and condition, without the true cause of the mischief being discovered. Indeed, many horses have been condemned as useless, when attentive examination might have detected the cause of mischief to have existed in the teeth. Some time since, my attention was called to a Clydesdale cart-horse belonging to a high personage, which, for some months past, had gradually lost flesh, though well fed, and was now reduced almost to a skeleton. The food was quidded; and this and other symptoms induced me to suspect that the teeth were at fault; and, on examination, I found that one of the upper molar teeth projected considerably beyond the rest. The horse was cast; and it was then discovered that the cause of the projecting tooth was the disease of the opposite one in the lower jaw, one-half of which was gone, and the remainder diseased, and remarkably tender when touched; so that, when any food was on this side of the mouth, it caused considerable pain at every attempt at mastication. An instrument was contrived resembling a dentist's forceps, by the aid of which the diseased tooth was removed, when it was found to be in a carious state. The projecting tooth on the upper jaw was filed down to the level of the rest; the horse kept for some little time on soft food; after which he regained his flesh and condition, and is now doing well. The cause of disease in this instance was unknown; but probably it arose, as in some others, from a stone being taken with the food, and thus breaking the teeth, the remaining portion of which would then soon become diseased.

The teeth in the upper jaw are also occasionally diseased, and give rise to symptoms which in some respects resemble glanders, there being a discharge from one nostril. It may, however, be distinguished from this disease by the absence of any swelling of the glands, and by the discharge being very offensive. These symptoms sometimes proceed from an abscess at the root of the molar teeth, which requires the bone to be removed opposite the seat of disease, so as to afford an exit to the matter, and a means by which suitable dressings can be applied.

(19.) PAGE 147.—DISEASES OF THE TONGUE.

It sometimes happens that the halter is put in the mouth on the tongue, and is tied under the jaw, in order to lead the horse, or to tie up his head whilst being dressed. In this position the horse perhaps hangs back, and the tongue is nearly, or quite, cut through, and attached by a few vessels only. If the horse can be looked to directly, the wound may be sewed up; but if many hours have elapsed, it is vain to attempt union by the first intention, and it is better to cut through the remaining attachment, and to dress the tongue as advised in the text. The horse should be kept on soft food till the wound is healed. I have known many inches of the tongue thus removed; and it is astonishing how soon the mutilated member is again able to perform its office. From being used, it widens and flattens at the extremity, and the horse is enabled to gather his food in the stable as well as before, though, no doubt, if turned to grass, the inconvenience would be felt.

(20.) PAGE 150.

We are disposed to consider that very many horses escape the strangles altogether; for, in many instances where horses are bred and worked on the same farm for many years, they have not been known to be affected with this disease. Race horses, too, whose history can often be readily ascertained from birth, more frequently escape than otherwise; indeed, we are inclined to the opinion, that thorough-bred horses are more exempt than coarser breeds, not only from strangles, but also from other diseases affecting the glands, such as glanders and farcy, as well as from grease and swelled leg, and all morbid affections of the subcutaneous tissues.

We have little to remark respecting the treatment. A blister is, unquestionably, the best topical application; but it should be washed off as soon as it rises, by which means it can be repeated in a day or two, and so the action can be kept up, which will greatly promote the suppurative process. After the abscess is lanced, a linseed poultice will be a very desirable application; and, with regard to injections, they may be omitted without injury. Although the ages from two to five are the usual period for strangles to appear, yet it occasionally attacks old animals; we have, indeed, known it affect a horse sixteen years old, and within the last month an animal eight years old, but such instances are rare.

It is a very desirable thing in strangles to get the submaxillary abscess to form and suppurate without much delay; for when it is suppressed, or does not form in this place, there is sometimes danger to be apprehended; occasionally, abscesses will form internally, and carry off the patient. The symptoms of these untoward cases are an unthrifty coat, occasional shivering fits, and a pulse rather accelerated.

When the glands remain hard, and do not suppurate, the disease is frequently termed *bastard strangles*, and may lead to glanders. The use of iodine, applied externally as an ointment, and internally as hydriodate of potass, in daily doses of five to ten grains combined with tonics, will be found useful.

(21.) PAGE 152.—POLL-EVIL.

All cooling applications to the poll-evil are useless, for when once the swelling which constitutes the disease has appeared, we have never known it dispersed, but sooner or later it suppurates. It often takes many months before the matter reaches the surface; but the more complete the suppuration is, the easier it is to effect a cure. The injury, which generally arises from striking the poll against a low doorway, is deep-seated, and the surface of the bone is often diseased from the beginning. Horses that are ewe-necked, and disposed to throw up their heads suddenly, are most liable to the disease; and we have found that the Suffolk breed of horses are more prone to it than any others, being more irritable workers, and more prone to ewe-necks; we speak now of the inferior specimens of this otherwise valuable breed of horses.

It must be confessed that the poll-evil is very difficult to cure, a difficulty arising not from the character of the injury, but rather from its situation, and the nature of the surrounding parts. When matter forms in any situation it has a tendency to pass downwards, and to seek an exit where the least obstacles are offered to its passage. It consequently forms passages or sinuses amongst the muscles, and, when these are filled, the matter points to the surface. This tendency continues after an external opening is made, and deep sinuses are formed in various directions, rendering it almost impossible to get a depending opening.

The abscess should not be opened till the matter is thoroughly formed, and then a depending opening should be made, through which a seton may be passed. The great error frequently made in the treatment of poll-evil is, that these openings are not made half large enough, so that much of the pus flows in another direction, and there forms sinuses. Now, the chief art in the treatment of this disease is to use the bistoury freely, to lay all the sinuses open as much as possible, and to throw them together; then to make the lower opening extremely large, and as low down as possible, large enough, indeed, for two fingers to be inserted. If the bone is injured, it will be necessary to apply some caustic application, in order to cause a healthy slough. Pressure is found very useful in keeping the sides of the wound together, and preventing the formation of sinuses. With this view it has been recommended to apply a tight compress, by means of bandages, round the part, but it is extremely inconvenient to apply them in consequence of the windpipe interfering.

(22.) PAGE 156.—STAR-GAZERS AND EWE-NECKED HORSES.

The distinction between these faults, or vices, as such defects are commonly termed, is not given quite correctly in the text. Although a star-gazer is always ewe-necked, yet a ewe-necked is not always a star-gazer. They may be considered as different degrees of the same fault, the latter being the worst. A ewe-necked horse is exceedingly unpleasant either to ride or drive, for the neck, low set on, instead of being nicely arched, and thus affording a proper resting-place for the bit on the bars of the mouth, is carried straight out, and the head high, and such horses are in the habit of throwing up their heads suddenly, and thus destroying for the time all connection between the hand of the rider and the mouth of the horse. A star-gazer, on the other hand, always appears to carry his head a storey higher than his body; but, although he may be hard-mouthed, and is, indeed, always deficient in the proper sensation of the bars, yet he does not bore on the bit, as stated in the text, and is not heavy in hand.

(23.) PAGE 158.—INFLAMMATION OF THE VEIN.

Although the various causes enumerated in the text do certainly occasionally produce inflammation of the vein, so that the cases of this disease are most frequent where the operation is carelessly or slovenly performed; yet it must be confesssd that the disease does sometimes occur when the act of phlebotomy has been performed with the utmost care and skill; indeed, it appears to be subject to atmospheric influences, for it is certainly more prevalent at some periods than at others.

When the vein is hard and enlarged its passage is obliterated, and the parotid gland above will often swell in consequence; and, if the horse takes the least exertion, the veins of the head on the affected side will become greatly distended.

The course of treatment which a considerable experience of the disease has induced us to adopt is to avoid all setons, and dissecting out of the vein, and, above all, caustic injections, which we have known produce a fatal result; but first to allay the superficial inflammation by cold applications, and then to blister the part, washing off the effects of the blister the following day, and repeating it several times. The ointment of iodine may be alternated with the blister to advantage. During this time the horse's head should be tied up to the rack, and he should be fed on such food as will not require any considerable action of the jaws, such as bran mashes, scalded oats, carrots, and but very little hay. By pursuing this mode of treatment for several weeks, the swelling will become greatly reduced, the blood will find new channels, and the horse will become as useful as ever. We cannot remember a single case where this mode of treatment has been pursued without a favourable result taking place. In a few instances it may be necessary to apply the iron to the edges of the wound, and use other methods to stop hemorrhage.

(24.) PAGE 160.—ROARING.

This disease is not always so easily discovered as is implied by the statement in the text. In some cases, the symptoms of roaring are only developed after a sharp gallop; and, in many, roarers will not grunt when suddenly alarmed. It is generally very old and confirmed cases that exhibit this symptom. There are not only a variety of degrees in which roaring may exist, but there are many different causes which produce the noise which gives a name to the disease. Several of these have been stated in the text; but one, and by no means an unfrequent one, has been omitted, which is the absorption and paralyzation of the muscles, on one side, which assist in opening and enlarging the entrance to the larynx, by pulling back the arytenoid cartilages, as they are termed. The consequence of this is, that an obstruction takes place; and, although the air can enter with sufficient rapidity when the animal is at rest, yet when respiration is hurried by exertion, a great noise is occasioned by the air passing through the narrow aperture with great rapidity.

The greater number of the cases of roaring certainly occur with carriage horses, and are connected with the practice of tight reining. It is not, however, the sudden reining in which causes the mischief, but the long-continued position of the windpipe when thus distorted. When the breathing is greatly distressed, either from over-exertion or from inflammation of the lungs, the horse stretches out his head, and extends the nostrils, and by this means places the air passages in a straight line, and admits their greatest expansion. When, however, the neck is much arched, there is a great angle formed at the throat, and the upper ring of the windpipe is forced up so as to form an obstruction to the passage of air. This position of the windpipe, at first temporary, at length becomes permanent, and thus proves a frequent cause of roaring.

(25.) PAGE 163.—FORM OF THE CHEST.

In speedy animals the chest is, no doubt, more capacious than in slower ones, and a greater quantity of atmospheric air is inspired, so as to afford a full supply for the purpose of respiration. This large capacity is gained, however, not by the greater rotundity of the chest, but by its increased depth and length, more particularly the former. It is very evident that a circular chest must present a very unfavourable surface for the attachment of the shoulder blade, and, indeed, must induce a rolling action which is inimical to speed; thus we find that animals with very circular chests, and with their fore-legs, in consequence, wide apart, are by no means speedy, but have a great predisposition to the accumulation of fat. In such animals a considerable quantity of fat is generally found round the heart and in other parts of the chest, so that, in point of fact, animals with circular chests have smaller lungs than those with deep and flat ribs. It is extremely desirable for a cart-horse to have a circular chest, as this denotes a disposition to make flesh, and thus to economize food; and, for the same reason, in other horses, a rather circular abdomen is approved of—in fact, one neither too wide nor too flat is the most desirable.

(26.) PAGE 169.

The same observations we have made under the head of Poll-evil, apply here with equal force.

(27.) PAGE 171.—CHEST-FOUNDER AND ANTICOR.

The absorption or diminution of the muscles of the chest alluded to in the text, and which used to be denominated Chest-founder, is neither more nor less than disease of the feet (the navicular disease, in fact), and which existing in both feet, prevents the fore-legs being exercised to the same extent as before; and, consequently, the muscles, from being partially thrown out of use, become, to a certain extent, absorbed.

By the term anticor, we rather understand an abscess in the breast, or brisket, to which some horses are liable. It is a rare disease, and more frequently attacks heavy-chested horses. Foreign horses are more subject to this disease than English animals.

(28.) PAGE 172.—THE PULSE.

The frequency of the pulse is certainly overrated in the text. There is not that difference in the pulsation of the cart-horse and the thoroughbred, as there stated, and 36 or 37 a minute may be considered the standard pulse in the latter when in health, and free from excitement. It is most important to distinguish between the pulse of fever and that of inflammation. We may have a pulse of the greatest rapidity, as in influenza, and yet no one part of the body much inflamed. We have known the pulse of the horse more than trebled, and the animal still recover; and, on the other hand, in cases of inflammation, a pulse of 60 has betokened great danger, and, in some cases, has been succeeded by death.

(29.) PAGE 177.—FEVER.

Pure fever does not of necessity require blood-letting, and, indeed, will often be removed better without the aid of depletion. This fact is well shown in cases of influenza, where great quickness of the pulse, with a hot mouth, and other tokens of fever, are present, and which symptoms may be often removed without the aid of bleeding. We decidedly object to bleeding in those cases of fever attended with a shivering fit; and, indeed, we have found that, unless the pulse is full and strong, it is generally better to avoid bleeding. Fever is far more dependent on some irritation of the nervous system than is implied in the text, and bleeding is often calculated to increase this irritation. The administration of a diffusible stimulant that will act on the skin, such as the spirit of nitrous ether, is a far better mode of treatment, and will often cut short a case of fever, which the abstraction of blood would only prolong. In cases of fever the mucous membrane is very frequently in an irritable state, so that a purgative will greatly increase such irritation, and should, therefore, be avoided. If the bowels are costive, oily laxatives should be administered, and aloes carefully avoided; unless given in a liquid form, and as a single dose. It is a very dangerous practice to give small doses of aloes until the bowels are relaxed, for, from the long period required to relax the bowels in the horse, before this effect is produced a quantity will be taken sufficiently to endanger life, and, indeed, death has, in many instances, occurred from this practice. It is better, therefore, either to abstain altogether from giving aloes in such cases, or otherwise confine it to one moderate dose of two drachms.

The administration of purgative medicine is at all times attended with greater risk in the horse than with man; and in febrile affections generally, and more particularly when the mucous membrane is in an inflamed or morbid state, the internal coat of the intestines is peculiarly sensible to the action of purgatives, and a very slight dose will often produce excessive purgation.

(30.) PAGE 178.—BOG AND BLOOD SPAVIN.

Much error appears to have prevailed with regard to bog spavins. We speak with confidence, and after numerous dissections, when we say, that this disease does not occur from the distension of any mucous bags, and, therefore, there is no possibility of cutting them out. A bog spavin is neither more nor less than a distension of the capsular ligament of the joint itself; so that, if we cut into it, we open the joint, and endanger the life of the animal. There are different degrees of severity in which this disease may exist; it may be merely an increased secretion of synovia, so as to distend the ligament, and in such case it is readily curable; or it may be, as it more frequently is, a rupture of the connections of the ligament with the bones, so as not only to distend, but actually to enlarge, the cavity of the joint. In the latter instance, though the disease may be temporarily removed, it generally recurs, with work. When lameness attends bog spavin, there is usually no little degree of inflammation on the synovial membrane of the joint; and, in cases of long standing, the synovial fluid becomes solid, and causes permanent stiffness. *Thorough pins*, are the same morbid affection as the bog spavin, but affecting the upper and back part of the joint, and on each side.

With regard to the blood spavin, the vein, as it passes up the leg, may certainly be somewhat obstructed by a bog spavin; and, consequently, a little enlarged; but so slightly, that we believe that the bog and blood spavin of the old farriers were one and the same thing, the vein, from its proximity, being supposed to feed the enlargement.

The best treatment for these enlargements is, next to the actual cautery, the repeated application of the iodide of mercury, which both operates as a blister, as well as specifically, on the absorbents.

(31.) PAGE 181.—BLEEDING.

In performing this operation with the fleam, the blood-stick should never be loaded with lead, as there is no possible occasion for such extra weight. The lancet requires much greater skill; and, whilst the jugular vein of the near side is the most convenient situation for the fleam, the off side is the best for the lancet. In using the latter, the head of the horse should be elevated, so as to put the vein somewhat on the stretch, and prevent its rolling; the vein is then pressed with the fingers of the left hand, which, obstructing the current, causes the vein to swell: the lancet should then be dexterously thrust forwards and upwards, so as to open the vein with one incision. The lancet should not be too large—should be shaped like a human lancet, and about double its size, with a very sharp point. In bleeding from the arm or the thigh, the fleam is more convenient than the lancet.

In closing the orifice the pin should not be very large; and fine tow should be used to wind round it, and not hair, as the latter is so apt to slip.

(32.) PAGE 182.—INFLAMMATION OF THE LUNGS.

The diseases of the lungs have been carefully investigated since this work was first published, and the result has been that we are enabled to detect three important varieties in the inflammatory affections of the lungs and chest, viz., congestive inflammation of the lungs or *pulmonary apoplexy*, *pneumonia* or true inflammation of the lungs, and *pleurisy* or pleuritis. The first consists of distension of the small vessels of the lungs with dark venous blood, and is generally produced by over-exertion, particularly if the animal, when attacked, is not in proper condition for work. The symptoms are, rapid breathing, cold extremities, and short duration of the disease, ending either in death or recovery. When death supervenes, the lungs are black, as stated in the text. With regard to treatment, bleeding should be adopted, if the pulse is distinct as well as rapid; if not, a diffusible stimulant should first be given, and bleeding should follow.

True pneumonia is longer in its duration, but the symptoms are often obscure at first. There is considerable distress, but there does not appear to be any active pain; and in this respect it may generally be distinguished from *pleurisy*, or inflammation of the membrane which lines both the lungs themselves as well as the internal surface of the chest. Being a fibrous or serous membrane, secreting a serous fluid, the same characteristics are met with as in inflammation of the same membrane in other parts of the body. These peculiarities are a full, strong, as well as rapid pulse, pain, sometimes acute, but varying from time to time, and the blood presenting a considerable quantity of buff, or fibrine. The tendencies of the disease are either the deposition of water in the chest, or else fibrous flakes, and sometimes both conjoined.

Sometimes pneumonia and pleurisy are combined together, causing *Pleuro-Pneumonia,* and then the danger is increased at the same time, as the symptoms are rendered more obscure.

Blood-letting is one of the first of our remedial measures for these diseases, but is called for in a more marked degree in pleurisy than in pneumonia. The pulse, however, in both cases, must be our guide as to the quantity of blood to be taken; and, as stated in the text, a decided effect should be obtained. Repetition of bleeding, too, may be had recourse to, and with greater freedom, in pleurisy than in pneumonia. In the latter disease we must take care that we do not shipwreck the vital powers by repeated and too copious venesection, or mistake the effects produced by bleeding for the symptoms of the disease itself. It is only by the conjoint aids of science and experience that these nice discriminations can be made; it is, therefore, the height of folly for the inexperienced owner to attempt to treat such cases himself, or to rely on ignorant men, who are utterly unacquainted with the structure of those parts whose diseases they venture to treat.

In some cases we have both pleurisy and pneumonia conjoined, and then the symptoms, though extremely severe, are yet very obscure, and the chances of successful treatment are much diminished. The water in the chest, spoken of at page 184, is the termination of pleurisy, and becomes fatal in the majority of instances (particularly if, in addition to this serous fluid, flakes of lymph are also thrown out). In some cases where *hydrothorax* has supervened early, and the inflammation has otherwise subsided, relief has been obtained by the operation of *paracentesis,* or tapping the chest, which consists of plunging an instrument, called a *trochar*, between the ribs into the cavity of the chest, and then withdrawing it, but leaving the canula, or tube, covering it, so as to permit the escape of the fluid. It is generally necessary to repeat the operation more than once, and on both sides, if they contain fluid.

We have little to add with regard to the treatment of these inflammatory diseases, except that we do not approve of the many repeated bleedings advised in the text. It is rarely the case that more than one bleeding is desirable, but this in general should be very copious. The best guide as to the propriety of the repetition of bleeding is the strength of the pulse, and not its frequency. If some hours after the first depletion it is still strong and full, as well as quick, then bleeding is most probably called for again, and more particularly if the blood has exhibited a thick buffy coat. If, on the contrary, the first bleeding has exhibited no buff on the surface of the abstracted blood, then it is rarely the case that a repetition is likely to be of any service. With regard to sedative and other medicines, we have little to add. Aloes should be always eschewed, and diuretics should not be continued after 12 drs., or 2 ounces of nitre, or resin, have been taken. We have also found very good effects from the administration of small doses of calomel and opium, twice a day, two scruples of the former, and one of the latter, being sufficient for a dose; and we have also found an ounce or two of the spirit of nitrous ether very serviceable in the early stage of the disease, particularly if the legs and ears are cold.

(33.) PAGE 188.—CATARRH.

If there is cough, the throat should be blistered, or stimulated by the tincture of cantharides.

(34.) PAGE 189.—BRONCHITIS.

This disease may either accompany pneumonia, or occur as an independent affection. There is a great diversity in the degree or severity with which this disease may appear. Sometimes the inflammation is so excessive from the first, as to render it one of the most dangerous complaints by which the horse is affected, the lining membrane of the bronchial tubes, as well as the windpipe, appearing in a state of gangrene. At other times the symptoms are far milder, the inflammation terminating in a copious secretion of mucus, which is discharged from the nostrils. The pulse in this disease is often characterized by weakness, differing in this respect from pleurisy in a marked degree; but in some cases we have found a strong pulse with buffy blood.

In addition to the treatment mentioned in the text, the use of setons in the brisket, or as near the termination of the windpipe as possible, are of material service; and, if the inflammation appears to extend up the windpipe, the setons should also so extend, or the course of the windpipe may be blistered. Physic should be avoided. With regard to bleeding, this must entirely depend on the state of the pulse. We have known cases where the weakness of the pulse has entirely forbidden depletion; and, on the other hand, other instances where several bleedings have been required. As a general rule, however, the blood-letting should not be very copious.

(35.) PAGE 189.—CATARRHAL FEVER—INFLUENZA.

Though this disease often occurs in the form described in the text, yet influenza may, and often does occur, as a severe epidemic both with and without the peculiarities of catarrh. The diseases, therefore, though bordering, and often running into each other, are yet distinct and require separate notice.

With reference to the treatment of catarrhal fever, we should recommend great caution with regard to blood-letting; and, if much weakness is manifested, it should not be practised at all. Equal caution should be observed with regard to purgative medicines; but, if the bowels are constipated, a pint of linseed oil, or two or three drachms of aloes in solution, may be given, but not repeated. This may be assisted by injections.

The influenza very extensively prevailed as an epidemic in this country in the years 1836 and 1840. A very full account of this disease as it prevailed during these periods may be found in a small treatise on the subject published by the present writer. The symptoms in 1840 were very similar to those of the epizootic of 1836, sufficiently so to justify us in denominating it the same disease. The first symptom in that of 1840 which awakened attention was the sudden failure of the appetite (either total or partial); the horse, perhaps, might have appeared perfectly well in the morning, and at noon refused his feed. At this stage we usually found the mouth hot and the pulse quickened, varying, however, from 42 to 80, being sometimes full and strong, but more frequently soft and weak. There was generally a somewhat dull appearance of the animal at first, although nothing compared to what afterwards supervened; the coat was often staring, and when so the attack usually became more severe. This symptom, however, was far from being universal, and the extremities were rarely cold. In the course of six or twelve hours, the symptoms became more aggravated, the pulse increased in frequency, the appetite was more diminished, and probably the legs and eyelids were considerably swollen. In some cases the respiration became quickened, and in others there was cough and sore throat, but, in the majority of patients, there was no bronchial affection whatever.

In a few instances, the disease quickly reached its acmé, but, generally, the symptoms increased in severity for two or three days; when, supposing judicious treatment had been employed, they gradually declined, and at length totally disappeared, the animal slowly regaining his former health and spirits.

The bowels, generally speaking, were not apparently much deranged, but their mucous coat was particularly susceptible to the action of aperient medicines, and the fœces were frequently enveloped in thin slimy mucus, and often softer than in a state of health.

In some cases the affection of the eyes was so violent as to occasion temporary blindness, and in others pneumonia was present, but more frequently severe bronchitis. In many patients the œdematous swelling of the legs was enormous, and continued obstinate when the other symptoms had abated. But commonly, in proportion as the legs and eyes were much affected, the internal viscera were free from disease, and *vice versâ*. This rule, however, was by no means universal, for, in several instances, severe cephalic and thoracic symptoms were present in the same subject and at the same time.

When an animal had been previously suffering from some chronic disease, such as broken wind, or hepatized lungs, the influenza was nearly sure to light up afresh the embers of the former fire; and this local disease generally proved troublesome and obstinate. So, likewise, when, from the idiosyncrasy of the animal, an organ was in a weak and susceptible state, inflammation in that part was quickly excited by the general fever present in the system.

Treatment.—Whenever the pulse was full and strong, blood was abstracted with the best effect. In such instances I observed the blood slow in coagulating and invariably presenting a buffy coat; great care, however, was taken not to abstract too large a quantity; and I found I could produce the required influence by half the quantity which, in ordinary inflammatory affections, it would be necessary to take. The amount of blood withdrawn was always determined by its effect on the pulse, taking care, as soon as its character was materially altered, becoming softer and less perceptible, to pin up the orifice. This alteration was sometimes produced by the loss of four pounds of blood, oftener by six, occasionally by eight, and in a few instances ten pounds were required to be taken. In two or three cases, where there appeared to be severe internal inflammation, the blood-letting was repeated on the following day, and in one case on the same; but, as a general rule, even in cases where the pulse had on the following day regained its strength and fulness, I abstained from a second bleeding, trusting to medicine and the progress of the disease to soften the pulse, a result which usually followed on the second or third day.

Recourse was had to local venesection still more frequently than to general bleeding; indeed, whenever the eyes were much inflamed, or the lids swollen, I scarified the latter with a lancet, and opened the angular veins, which course of procedure was attended with the best results, for the local inflammation usually subsided in the course of twelve or twenty-four hours, whether I bled generally before or not.

On referring to some fifty cases, it appears that in twenty-three I employed general bleeding; in the remainder I did not; but in twenty-five cases I bled locally either from the eyelids and eye veins, or the bars of the mouth. The majority of these were cases which had not been bled previously, and the minority belonged to those in which I had before employed venesection. More than one half of the horses that were bled generally were from the same stable, and were mostly young cart horses that had been recently purchased, and afterwards worked very hard. They had also been allowed a considerable quantity of beans, a diet to which they had not previously been accustomed. Among these horses I found my severest cases, which were often complicated with pneumonia, bronchitis, and other visceral derangement. In them, too, the blood presented a thick buffy coat, and the pulse was strong and full.

The usual treatment in the way of medicines consisted in administering the following:—

(Recipe.)	Oil of croton	5 drops.
	Nitrate of potassa	4 to 6 drachms.
	Potassio-tartrate of antimony . .	1 drachm.
	Spirit of nitric ether	4 drachms to 1 ounce.
	Solution of acetate of ammonia .	2 to 4 ounces.

Warm water sufficient to make a draught.

Sometimes four drachms of bi-tartrate of potassa was added to the above; and, when the head appeared much affected, a drachm of camphor. This draught was generally administered once, but sometimes twice a day, the croton oil being omitted after the first dose: after the first day, in by far the greater number of cases, two drachms of powdered gentian were added, and, after the second or third day, a ball was substituted for the draught, consisting of:—

(Recipe.)	Nitrate of potassa	3 drachms.
	Potassio-tartrate of antimony	1 drachm.
	Powdered gentian root	2 drachms.
	Powdered pimento berries	1 drachm.

Treacle sufficient to form a ball.

In one case the above draught produced profuse perspiration immediately after, and each time, it was administered. Although this effect may be principally ascribed to the idiosyncrasy of the animal, yet it proves the diaphoretic properties of the medicine, although this effect may not generally be distinctly perceptible.

Counter Irritation.—In by far the greater number of cases there was no inflammation of the air passages; but whenever it was denoted I blistered the throat, the course of the windpipe, and the breast, or inserted setons or rowels, as the particular case appeared to demand.

Such is a brief, but I trust a succinct account of the treatment which I have found successful, not only in conquering the disease, but in restoring health and strength in a short space of time. Although the majority of cases were not dangerous, yet many of them were so, and it is notoriously the fact that a great number of horses have died from the disease in various places. Indeed, in the establishment to which I have referred, three horses had died from it under the care of another person; and, in several instances, where horses have been treated by the owners, although the case was not dangerous, they recovered but slowly, and with great loss of condition.

I have found in the epidemic in question a greater disposition to œdematous swelling of the extremities and sheath than in that of 1836, and so obstinate occasionally were these enlargements, that they were reduced with much difficulty, and only after the frequent and continued employment of diuretics, and the insertion of setons in the thighs. There likewise appeared to be throughout the attack a capability of taking large and repeated doses of diuretic agents, without exciting the kidneys in any great degree. At least double the quantity could be given, and with no greater action than half the dose in a state of health.

(36.) page 192.—Chronic Cough.

Chronic cough is generally caused by long continued or neglected catarrh, or sore throat, which leaves behind an irritated and sometimes a thickened state of the lining membrane of the larynx. There is generally a great dryness of this membrane, so that a horse generally coughs when first excited by exercise, which disappears when the parts become lubricated by its proper secretion. One of the best remedies for an obstinate cough that bids fair to become chronic is a seton under the throat, which should be kept in for seven or eight weeks.

(37.) page 194.—Broken Wind—Roaring, &c.

The lungs of a broken-winded horse being blown up as it were with extravasated air, occupy, after the act of expiration, a much larger space than do healthy lungs, and are thus unable to expel their contents; the same reason renders them incapable of inspiring so much air as in a state of health. The consequence of this is that the breathing is rendered quicker, and the expiration being more difficult than the inspiration, it is performed with a double action, for it is only by this means that the air can be expelled. This difficulty in expelling the air will account for the peculiar short husky cough so characteristic of broken wind; the lungs, indeed, are not strong enough to produce a strong cough.

The only secret in the treatment of broken wind is to afford nutriment in a small compass, and to keep the animal in the highest state of condition possible. Medicine is of no further use than so far as it may promote the health of the horse.

With regard to the various names given by dealers to the different diseases of the air passages in the horse, we may observe that the term *piper* is applied solely to a broken-winded horse, and not to any variety of roarer. It appears to refer to the horse's air pipes as being out of order rather than to any noise exhibited.

The terms *wheezing* and *whistling* are simply varieties of roaring, and express the noise made in the act of respiration. Whistling is when the calibre of the larynx is very considerably diminished, more so than in ordinary roaring. Wheezing probably arises from impediments in the air passages of the lungs, whilst high blowing is simply the action of the false nostrils. Eclipse is stated to have been a roarer; we believe that he was merely a high blower. We know at present an excellent hunter that has proved his goodness in many a hard run, and has yet more than once been condemned as a roarer. An opinion which the writer gave some years since that he was no roarer, and would not, in all probability, become so, has proved to be correct.

Bad confirmed roaring can frequently be ascertained by suddenly alarming the horse, by pretending to strike him. He makes a sudden expiration through the narrowed passages, which causes a grunting noise, and thence he is called a grunter.

(38.) PAGE 197.—THE DIAPHRAGM.

The diaphragm is liable to two specific diseases, besides partaking of those of the neighbouring parts, such as pleurisy or peritonitis. These diseases are spasm and rupture, which are both rare in their occurrence. The symptoms of the former are very peculiar,—a beating or thumping is both heard and felt on placing the hand on any part of the body. This beating at first appears to come from the heart, but it is soon found that it does not correspond with the action of the heart in point of time, though it does with the act of breathing. The best treatment consists in the administration of an antispasmodic, such as Tinc. Opii. ʒi, and Sp. Nit. Æther, ʒiss. in a pint of lukewarm water. The horse should be rested for some days, and his bowels regulated by mashes and a mild aperient.

Rupture of the diaphragm is invariably fatal; the symptoms are obscure at first; and, indeed, the nature of the disease can very seldom be accurately determined. One symptom is almost uniformly present, which is that of sitting on the haunches; this peculiarity is, however, common to other fatal diseases, such as rupture of the intestines, as well as fatal obstructions from calculous concretions.

(39.) PAGE 205.—SPASMODIC COLIC.

It is very important to discriminate accurately between colic and inflammation of the bowels. The principal distinctive symptoms are these: in colic, although the pain is excessive there are yet occasional remissions of the paroxysms; whilst in inflammation of the bowels the agony continues without remission, but varying in severity according to the violence of the disease. The pulse, too, in the latter disease is rapid, and often small and thready; whilst in the former, though it becomes more rapid during the paroxysms, it subsides during the intervals of ease. A careful examination of these distinctions will generally be sufficient to prevent any mistake with regard to the character of the disease. Indeed, we must not rely on any others.

There appears to be three varieties of colic, *spasmodic*, *flatulent*, and *stercoral*, or that which proceeds from constipation or obstruction in the bowels. The symptoms vary with the situation of the disease—whether in the stomach, the small, or the large intestines. Flatulent colic generally affects either the stomach or the large intestines. When the former it is extremely dangerous, and yet is relieved with greater rapidity than when elsewhere existing. In a case that proved fatal before any remedy was resorted to, the stomach was found by the present writer distended to three times its ordinary size. Flatulent may be distinguished from spasmodic colic principally by the great distention of the abdomen which takes place; whilst stercoral colic is marked by the less violent, though more obstinate, continuance of the symptoms of pain.

For flatulent colic one of the best remedies is sulphuric ether, combined with the tincture of opium, and even in other cases it is preferable to the spirits of turpentine, which is apt to irritate and inflame the throat whilst being administered, and the bowels likewise, if there is any accession of inflammation. If relief is not obtained in the course of an hour, bleeding should be resorted to; and, if constipation is present, a watery infusion of aloes, or a dose of oil, should be given with the antispasmodic. In stercoral colic dependence must be placed on relieving the obstruction, and at the same time keeping down pain and irritation by means of an opiate. For these purposes large doses of linseed oil, such as a pint three times a day, with an ounce of tincture of opium, should be given until the desired object is attained. It is better, however, after the exhibition of a few doses, to substitute the watery infusion of opium for the spirit, as being less likely to produce inflammation. By steadily pursuing this system of treatment, we have, in many of the most obstinate and formidable cases, succeeded in establishing a cure. Other means, however, such as repeated and copious injections, should be had recourse to in addition; and, as soon as the bowels become relaxed, means should be used to counteract the excessive purgation which follows, which, if effected by ordinary medicines, would be exceedingly dangerous, but when produced by means of linseed oil, is comparatively without danger. Drenches of thick flour gruel should be given; with two ounces of prepared chalk, and two drachms of tincture of opium, to stay the bowels.

(40.) PAGE 207.

When colic arises from stones or concretions in the intestines, the pain is usually very severe, until, by rolling about, the stone is dislodged from the position in which it was fixed, and then, becoming free, the pain ceases. We may presume such to be the nature of the case if the horse lies much on his back, and rolls over from side to side, with an evident desire to relieve himself from some painful pressure. After repeated attacks of this kind the case at length becomes fatal, the calculus accumulates, becomes firmly fixed, obstructing all passage, inflammation supervenes, and the animal dies.

Millers' horses are more particularly subject to earthy concretions, from feeding so much on bran, which abounds with the phosphate of lime, or bone earth, of which these substances principally consist.

(41.) PAGE 207.

In cases presenting the symptoms of colic, and terminating fatally, it is not unusual to find either entanglement or intervagination of the intestines. When such a result takes place the case is uniformly fatal; but it is somewhat doubtful whether the strangulation is the cause or the consequence of the other symptoms. We incline to the opinion that it is more frequently the cause of pain than the consequence of the intestine motions of the bowels, and more particularly in those cases where the symptoms are never relieved from the first, but continue to become more and more urgent, until, in the course of twenty-four hours, or less, it terminates fatally. In other instances, where the symptoms occur in paroxysms, and are followed by intervals of ease, and yet terminate in fatal strangulation, it is very possible that the strangulation is owing to the violent intestine motion of the guts.

(42.) PAGE 207.—INFLAMMATION OF THE BOWELS.

When this disease occurs it is usually in the most violent form, and is more frequently fatal than otherwise. Its symptoms in many respects resemble colic, but the pain, though equally severe, is yet constant; the pulse is extremely rapid, and often weak and small, and the extremities cold. Bleeding is called for most assuredly; but we should endeavour previously to bring warmth to the skin and extremities, and also to raise the pulse. Two ounces of spirit of nitrous ether, in which a drachm of opium has been infused, may be administered in a pint and a half of linseed oil. This will enable us to take a much larger quantity of blood than we should otherwise be enabled to abstract. It is of great importance to bleed largely in the first instance, but of very doubtful benefit to repeat the blood-letting. Warm fomentations to the abdomen are of much importance, and should be continued almost without remission, whilst the pain continues; thus applied, the heat of hot water will be more efficacious than any external stimulants. The oil may be repeated in doses of one pint until the bowels are opened, and the last dose should contain a scruple of powdered opium. Copious draughts of linseed gruel should also be given, and injections of the same frequently thrown up.

Inflammation of the peritoneum seldom occurs as an independent disease. When it does, it usually follows castration, or some injury external to the bowels. The treatment should resemble that previously described. It sometimes exists in unison with pleurisy, and also with the inflammation of the bowels (*enteritis*) just described.

Inflammation of the mucous coat of the intestines is also a very dangerous disease. It may be produced by cold, or by over-exertion, particularly in hot weather; or, more frequently than either, by an overdose of physic, or an ordinary or weak dose while the membrane is either in a state of irritation, or liable to become so from sympathy with some other important part, such as the lungs, more particularly its lining or mucous membrane.

Bleeding in this disease is seldom of service, the weak and almost imperceptible state of the pulse forbidding it. Our endeavours must be devoted to bringing warmth to the skin and extremities, and gradually stopping the irritation of the bowels and sheathing its internal mucous membrane. We may venture on powdered chalk with small doses of opium administered in thick wheat flour gruel.

(43.) PAGE 210.—PHYSICKING.

We have little to add under this head. We condemn, with the author, the reckless administration of violent doses, by which very many horses have been killed. The mucous coat of the intestines of the horse appears to be more irritable than that of man; besides which it relatively occupies a larger extent of surface.

Barbadoes aloes is certainly the best purgative with which we are acquainted. A drachm of ginger may be advantageously combined with it to prevent griping. A ball is certainly the best and safest mode of giving ordinary physic to a horse. It is necessary to give a much stronger dose in the form of a draught than that of a ball, which is probably owing to the fact, that with a ball a considerable amount of action is produced at one spot where the ball is dissolved, and the irritation there produced spreads by sympathy to the adjacent parts, whilst the liquid being spread at once over a large surface, a less amount of irritation is produced at any one particular spot. The exercise on the day following the administration of the physic should depend on the effect produced. If the purging is copious, no exercise should be given; but, if otherwise, it will much assist our operations by giving a greater or lesser amount of exercise, as may be required.

(44.) PAGE 212.—HERNIA, OR RUPTURE.

There are many varieties of hernia, some of which are curable. Scrotal hernia is not so common in England as in India and other countries, where it is customary to have many horses entire. It is however occasionally congenital, appearing at birth, and often rendering the little animal helpless, so that he cannot rise without assistance. The remedy consists in castration by the covered operation, that is, without cutting into the hernial sac, but placing wooden clams on the cord and the peritoneal membrane, and, at the same time, forcing the gut gently upwards towards the abdomen. In the course of a few days the testicles will slough off, or may be removed. The writer purchased a colt a few years since for a trifle, being abandoned by its owner as worthless, on which the operation was successfully performed, and the colt sold afterwards for a good price.

When the hernia is strangulated, violent pain and great danger is the result; the opening through which the gut has escaped is generally very small, being, in fact, the inguinal ring. In such cases, if the hernia cannot be reduced by manual operation, or the taxis, as it is called, it is necessary to open the hernial sac, and, by means of a bistoury, enlarge the orifice sufficiently to put back the gut—an operation of great difficulty and danger, and requiring much skill.

Abdominal hernia may occur in different situations, and are usually caused by external violence, such as the horn of a cow, or jumping over and across a post. The muscular and other covering of the abdomen is broken through, whilst the skin, from its greater looseness, remains entire; and, indeed, is the only object between the bowels and the air. If the case is recent, the hernia may be reduced, and the hernial sac opened, and the sides of the opening brought together by sutures of metallic wire. Where, however, the injury is of long standing or natural, as, for instance, in mares, when the abdominal ring is unusually large, we cannot succeed by this means; but yet the case is not always hopeless. The gut being forced back, an incision is made in the skin, and one or more wooden skewers passed through it, so that a good portion of the skin can be embraced by some strong waxed twine, the skewers preventing it slipping off the skin thus embraced, which sloughs off, and a cicatrix forming the surrounding skin becomes tighter and thicker than before—sufficiently so to keep the gut, for the most part, within the abdomen.

(45.) PAGE 213.—INFLAMMATION OF THE LIVER.

The symptoms which we have noticed as attending this disease are, a heavy dull appearance, loss of appetite, and respiration somewhat quickened, but not distressed as in inflammation of the lungs; the pulse is distinct and somewhat quickened, perhaps from 50 to 60 in the minute, The membranes of the eyelids are yellow, or at any rate pale. It is a very obstinate disease, often becoming fatal, even when the symptoms at first do not appear to denote danger. In such instances they gradually increase in severity, and symptoms of severe pain become connected with those of distress previously existing, and, in the course of six to ten days, the case becomes fatal.

Bleeding is required in the first instance, but not to the same extent as in inflammation of the lungs. Recourse should then be had to mercurial alteratives. Calomel two scruples, with opium one scruple, should be given twice a day for several days, until the system appears to be affected by the mercury. The relaxation of the bowels should be promoted by a pint of linseed oil, repeated twice or thrice. The hair should be cut off the side opposite the liver, and mercurial or blistering ointment rubbed in. If the horse refuses to eat mashes, plenty of linseed or oatmeal gruel should be given with the horn.

The hepatirrhœa, or rupture and bleeding from the liver, mentioned in the text, is uniformly fatal, if not at the first, at the second or third attack. It is sometimes attended with amaurosis, or paralysis of the optic nerve. Treatment is comparatively useless.

(46.) PAGE 213.

Jaundice very seldom occurs unconnected with inflammation of the liver; when it does, it is denoted by the yellowness of the membranes, and the absence of any of the symptoms of inflammation. It is best treated by the same internal medicines as those previously advised; or aloes may also be given in moderate quantities.

Although diseases of the liver are not so frequent nor so well marked in the horse as in the human subject, yet it is by no means uncommon, and particularly in old horses, for very considerable diseased action to creep on unobserved, merely causing, in some instances, the loss of flesh, which is ascribed to old age; whilst, in other instances, the horse preserves his flesh, but becomes unusually sluggish. If, however, any active inflammation attack such horses, the danger is very considerably enhanced by the antecedent disease, so as to render a case fatal that would otherwise yield to treatment. Sometimes we find the liver considerably enlarged; at others extremely pale or yellow, and breaking down with the slightest touch, whilst, occasionally, it is changed to a pulpy mass.

(47.) PAGE 216.—INFLAMMATION OF THE KIDNEYS.

This disease is readily distinguished from others, from the great tenderness of the loins when pressed, and the high colour of the urine, which is sometimes almost black.

The bleeding, as stated in the text, should be very copious, and repeated, if necessary. One of the best applications to the loins is a fresh sheepskin, the skin side inwards. This will very soon cause, and keep up, a considerable perspiration, which may be continued by means of a fresh skin in the course of twelve hours. With regard to internal medicines, one of the best sedatives is the white hellebore, in doses of a scruple twice a day. The bowels should be opened by an aperient draught, and abundance of linseed tea should be given, so as to sheath the irritated parts.

(48.) PAGE 217.

Diabetes is almost invariably produced by unwholesome food, such as mowburnt hay, or kiln-dried oats. It causes excessive debility and loss of flesh. We do not approve of blood-letting, as recommended in the text; but astringents, such as opium and catechu, combined with the sulphate of iron, in doses of a drachm twice a day, are of much service. The cause of the disease, whatever it may be, should of course be removed.

(49.) PAGE 218.—INFLAMMATION OF THE BLADDER.

This is a very rare but exceedingly dangerous disease, the irritation being so great that it is almost impossible to keep any soothing application in the bladder, the contents of which are being continually ejected. Recourse must therefore be had to very copious depletion, so as to endeavour to check both the inflammation which exists, as well as to assuage the irritation which forbids topical measures. We may assist the effect by the exhibition of calomel combined with opium and tartarized antimony, two scruples of each being administered three times a day. The same means may be adopted when inflammation attacks the neck of the bladder, and the spasm prevents its evacuation. As stated in the text, the bladder of the mare can be readily evacuated by means of a catheter; and, by the aid of the elastic and flexible catheter, the bladder of the gelding can also be discharged, though the operation requires some tact and skill. The writer has thus succeeded in evacuating the bladder of a gelding in a case where it was distended almost to the point of bursting.

(50.) PAGE 219.—CUTTING FOR THE STONE.

In performing this operation, the horse is cast and turned on his back, and supported in that position. A whalebone or wooden staff is then passed up the urethra, and when it is felt at the perineum just under the anus is cut down upon. A pair of forceps is next passed through the wound thus made, into the bladder, with which the stone must be removed. The bladder should then be washed out with tepid water, and the wound sewed up.

(51.) PAGE 227.—CASTRATION.

We agree with the author, that the old method of operating, by opening the scrotum with the knife, cutting the clams on the cord, and searing it off with the hot iron, is as safe and unobjectionable as any. We have, however, in performing this operation, found the use of chloroform very beneficial, both in removing all pain, and also preventing that severe struggling which often takes place, and which has sometimes been followed with very dangerous consequences. With this assistance we have safely performed the operation in the course of seven minutes, without any pain to the animal.

(52.) PAGE 228.—SPRAIN OF THE SHOULDER.

These cases are not so unfrequent as people generally imagine. Formerly all lamenesses, the seat of which could not be detected, were ascribed to the shoulder. Thus, navicular joint lameness was supposed to be in the shoulder; but since the real character and seat of these cases have been developed, horsemen have been disposed to fly to the opposite extreme, and instead of supposing that the shoulder was always, now consider that it is never, the seat of mischief. This, however, is not the fact. The symptoms of shoulder lameness, as pointed out in the text, are for the most part correct. A horse, however, never points in this disease, but will sometimes keep the lame limb further back than the other. The pain is almost entirely felt in motion, and not in sustaining the weight; whilst, in strains of the flexor tendons, there is no pain in extending the limb, but only when the weight comes upon it; so that a horse, in the latter case, steps short with the sound leg and long with the lame one, and the very reverse in shoulder lameness. Bleeding from the arm, and mildly blistering the shoulder, generally succeeds in effecting a cure.

(53.) PAGE 241.—BROKEN KNEES.

The knee is subject to a variety of injuries from falls. Sometimes, though the wound is large and apparently formidable, it is yet but an ordinary wound, and will heal readily with common treatment. At other times, partly from the width and extent of the wound, and partly from the restlessness of the animal, a wide and deep fissure takes place, which opens every time the horse bends his knee, and the sides of the chap growing at the same time, the wound becomes deeper and wider, and is extremely difficult to heal. The best mode of treatment is to cut away the sides and edges of the fissure to its full depth, thereby converting it into one simple wound, which may be healed with little difficulty. When the joint is opened the treatment must be conducted on very different principles from that of an ordinary wound; whereas, in the latter case, fomentations and poultices are very proper, in order to cleanse the wound and to keep down inflammation. When the joint is opened these measures are to be avoided, as they increase irritation by keeping open the joint, and encouraging the flow of synovia, and the entrance of the air.

In a case of open joint our principal endeavour must be to close the joint with all possible despatch, but even with judicious treatment our chances of success will materially depend on one or two circumstances, viz., the size of the wound, the cavity opened, and the fact as to whether inflammation is already set up in the joint or not. If the latter be the case, our chances of success are very slight, for the joint will, in all probability, become anchylosed or stiff. We may in great measure ascertain the existence of inflammation by the animal placing the limb in a bent position, and keeping it in motion by pawing from uneasiness. There are various methods of closing an open joint. A simple, and often a very effective one, is by means of a solution of bichloride of mercury in a solution of spirits of wine, and applied to the wound several times a day by means of a feather, till the synovia ceases to flow. Another is the application of the hot iron. The object in both these modes is to coagulate the synovia, so as to form a temporary plug to the joint till nature has time to close it more permanently. If either of these methods are adopted, it will not do to apply a poultice afterwards, as stated in the text, as this would wash away the plug which we have sought to form. Another method of treatment is to apply compresses of bandages and paste, letting them continue on for a length of time, so as to close the joint mechanically. Over these bandages we may apply linseed poultices with advantage, as by so doing we keep down inflammation without washing the coagulated synovia from the wound. By this means we may succeed even in formidable wounds, if inflammation has not been previously set up in the joint. It is very desirable that the horse should keep the limb in a straight position; lying down should therefore be avoided, and it is often necessary to support the animal in slings.

(54.) PAGE 244.—SPLINTS.

The best remedy for splints is unquestionably *subcutaceous periosteotomy*, an operation which consists in making a small incision through the skin at the lower part of the splint, and passing up a small knife made for the purpose under the skin, and so dividing the periosteum, as the membrane which covers the bone is termed. This relieves the tension, and thus puts a stop to the irritation, and its consequence, the bony deposition. A small seton is left in the wound for a fortnight, which keeps it open and produces some counter-irritation.

THE LEG.—PAGE 245.

We cannot agree with the Author when he says (page 245) that there are few good race-horses but what are deep in the leg below the knee; now, our own experience assures us that very many first-class race-horses have very faulty fore-legs, being slight and tottering below the knee. It is well known to trainers that such legs often stand their work very well, for race-horses require strength rather in the extensors than the flexors of the limb. Their action should be long and low, not high and round, which high withers and strong flexor muscles are calculated to produce. Thus what would be a grievous fault in almost every other kind of horse, is not with a horse kept purely for the turf.

(55.) PAGE 246.—STRAINS OF THE FLEXOR SINEWS.

In the description of the anatomy of these parts in the text (page 239) there are one or two omissions which it is necessary to supply. The office of these tendons is twofold, viz., to flex the limb and also to sustain a great portion of the animal's weight. They therefore act both as sinews and as ligaments. In the latter office they are greatly assisted by a strong ligamentous substance which is attached to the common bone above, and to the perforans tendon below, for which, indeed, it forms a sheath. A late veterinary writer has claimed this ligament as a discovery of his own. If the reader, however, who is curious about the matter, will refer to a Treatise on the Foot and Leg of the Horse, published by the present writer in the year 1840, he will find this ligamentary sheath minutely described, as well as the anatomy of the tendons themselves. In those strains of the tendons where the enlargement takes place, just under the knee, this ligament is the seat of mischief; and the effect is, if not early subdued, to cause a contraction of the sinews, and consequently produce first a straight or knuckling, and afterwards an overshot fetlock, so that the animal is rendered useless, and requires, in order to restore him to any degree of usefulness, the performance of an operation denominated

Division of the Flexor tendons, the purpose of which is actually to lengthen the sinews, and thus restore the fetlock to its original position. The operation is performed midway between the knee and fetlock, there being there no sheath of any consequence, and no synovial cavity to be opened. The tendons being divided recede to the extent of from one to two inches, which space is, in the course of a month, filled up with new tendinous substance thrown out from the divided extremities of the sinews.

In the ordinary strains of the flexor tendons the seat of injury is usually either midway between the knee and the fetlock, or somewhat nearer the latter joint than the former. There is every possible variety as to the amount of injury, varying from a slight lameness and a trivial enlargement to a very considerable swelling, and excessive pain, inflammation, and lameness. It has been doubted whether the sinews themselves are actually enlarged, many supposing that the swelling is confined to their sheathy investments. The writer, however, is assured from numerous dissections, as well as from the operation before alluded to of dividing the sinews, that they actually become both inflamed and enlarged.

When the lameness and enlargement are excessive, the mischief is denominated in racing stables a *break-down;* but in such instances this serious mischief is nearly always preceded by a slight strain, which is allowed to pass either unobserved or neglected, for we often find that no men are so careless and neglectful in this respect as those who are intrusted with the most valuable of all horses.

In these very severe cases the most energetic measures should be adopted, such as copious bleeding from the arm, repeated if necessary once or twice; constant warm fomentations for some hours at a time; physic, and after some days, cold applications to the leg, continued without intermission. By such treatment the writer has succeeded in restoring the animal to hunting work, when strained to such a degree as to be incapable of standing on the leg for a week.

(56.) PAGE 248.—WINDGALLS.

Numerous dissections of these windgalls have enabled us to give a different explanation from that stated in the text. They appear to be of two kinds, those situated between the suspensory ligaments and the flexor tendons, and which are the most common, and those formed between the suspensory ligaments and the bone in front, in each case immediately above the fetlock joint. Now, the former windgalls consist in an extension of the investment of the sheath of the flexor perforans formed for it by the perforatus, and the latter a distension of the capsular ligaments of the joint itself. In each a synovial cavity is affected, and consequently the windgall cannot be opened without considerable danger. They rarely occasion lameness unless attended with considerable inflammation or ossification of the neighbouring parts, or a solidification of the synovia. When this is the case the treatment advised in the text should be adopted.

(57.) PAGE 252.—GROGGINESS.

This term is applied by horsemen to slight lameness which goes off with exercise, and which is shown in the stable by the animal pointing the affected foot. The seat of the disease is the navicular joint, and it is altogether unconnected with that knuckling of the fetlock which is often seen in horses much worked, and which appears to be owing to weakness of the sinews, principally of the extensors.

(58.) PAGE 252.—CUTTING.

This evil is sometimes removed by shoeing the horse very thin on the inside, or even giving him a three-quarter shoe, the tendency of which plan is to make the horse carry its feet wider apart; but, in some cases, the very opposite plan is found the best.

(59.) PAGE 254.—SPRAIN OF THE COFFIN JOINT.

This disease is extremely rare, the joint being so well secured from external injury by the horny box in which it is encased. Its ligaments are, however, occasionally strained, which may be detected by heat at the coronet and tenderness, when the joint is wrenched laterally. When these symptoms are absent, we may safely conclude the disease exists elsewhere. It is not this, but the navicular disease, which is often mistaken for shoulder lameness. This disease, when it does occur, often occasions ossifications of, and near, the side cartilages of the foot.

(60.) PAGE 255.—RINGBONE.

This disease, so termed because it constitutes bony growth round the pastern bones, is of two kinds, which are distinguished by horsemen as true and false ringbones. The former occurs at the pastern joint, and generally arises from strain of these ligaments; but the latter consists in ossification of the cartilages of the sides of the foot, which become enlarged, as well as converted into bone. This is less frequently the consequence of strains than the other disease, and it is oftener found with heavy cart-horses than with lighter horses. Indeed, with many horses there seems a predisposition to change their cartilaginous structure into bone. The exciting cause of these false ringbones is concussion, produced by the weight of the animal and the hardness of the road or pavement. Thus, on the London stones the disease is very common; for the same reason, it is the fore limbs where the disease occurs, in nine cases out of ten. Indeed, we have found that all ringbones are more common in the fore feet than the hind ones.

The best treatment for ringbones of either kind is, after the inflammation has been in great measure removed by cooling applications, to fire the part, or otherwise well rub in the iodide of mercury ointment, washing off the effects on the following day, and thus repeating it again and again. We have by such means succeeded in removing the lameness, diminishing the enlargement, and restoring the animal, in many cases, to a state of usefulness.

(61.) PAGE 255.—STRAIN OF THE ROUND BONE.

This disease is so extremely rare that we have seldom met with an instance. The joint is so strong, so firmly secured, and so well protected, that it is almost impossible to become injured without dislocation occurring. Unless we can detect heat or tenderness about the part, we are by no means justified in supposing that the round bone is the seat of injury. For, although it used to be the case that all obscure lamenesses in the hind extremity were referred to some supposed disease in this joint, we are now well assured by *post mortem* examinations that in these obscure lamenesses the seat of disease is the hock joint.

When the neighbourhood of the hip joint is injured, there is external tenderness, evinced on pressure, and the mischief is produced by external causes.

(62.) PAGE 263.—STIFLE LAMENESS.

This joint and its connections are much more frequently the seat of disease than the joint above. From its situation, it is rather exposed to blows from the horse running through a narrow gateway, and thus striking his stifle against the post. Swelling, and heat, and tenderness, will point out the injured part, in addition to which the horse will step very short with the affected limb, being unable to extend it. The latter symptom will be also present when the ligaments of this joint have been strained, which, though very unfrequent, is yet occasionally the case.

The treatment in these cases consists in applying fomentations and cooling applications to the part affected, until the inflammation is subdued; which, if severe, may be further assisted by bleeding from the vein inside the thigh, and so relieving the vessels in the neighbourhood of the joint. When the inflammation is subdued, a blister on the joint will be desirable in cases of strains, but will rarely be required when a blow is the cause of injury.

(63.) PAGE 265.—DISLOCATION OF THE PATELLA.

This is almost the only joint in the horse which is liable to dislocation. In some horses there is a predisposition to this disease, from a too great flatness of the articulating surface of the patella. It usually occurs in young animals, and very rarely in old ones. We have known colts so liable to this dislocation as to be perfectly useless; and, on the other hand, cases in which the joint has been dislocated several times, and the animal, after a time, so far recover from the predisposition as to have no subsequent repetition.

The symptoms are strongly marked and ought not to be mistaken. The animal is found in a helpless state, being unable to stir or extend the affected limb; but, if forced to move, will drag the toe on the ground. The patella will usually, if not always, be found dislocated outwards, and the treatment consists in the assistant pulling the limb forwards, while the operator forces the patella in by lateral pressure. A blister over the part, or rather a blistering charge or plaster, will tend to prevent a recurrence of the evil.

(64.) PAGE 265.—THOROUGH-PINS.

The usual seat of thorough-pins is below, and in advance of the point of the hock, and it consists of distension of the capsular ligament at this part, and often a giving way or rupture of its connections. It precisely resembles bog spavin, which occurs at the lower and front part of the same joint. These affections may occur independently, but more frequently are found together. Though seldom productive of lameness, a weakness and stiffness of the part is often the consequence. The best treatment is either the application of the firing iron, or the repeated rubbing in of the ointment of iodine and mercury. A seton over the part has also been found useful.

(65.) PAGE 267.—CURBS.

The seat of this injury is usually the flexor tendon of the leg, as it passes through a sheath at the back of the hock. It therefore resembles a strain of the back sinews, as they are commonly called, although the injury is seldom so severe or so difficult to be cured. There are many degrees as to the amount and extent of the injury and the corresponding lameness. It is by far the best plan to take a horse out of work immediately on his showing lameness, as by that means the cure can be more expeditiously and perfectly effected; and there is much less enlargement left afterwards, than when a horse is patched up by the application of stimulants, and worked on, thereby renewing the strain again and again. After the inflammation has been quite subdued by the means pointed out in the text, we have found that the firing iron effects the most perfect cure, and secures the animal, in nine cases out of ten, from a return of the lameness. The marks of the iron, in cases of curbs, need not be great, and never operates to the animal's disadvantage. We have always found that a horse which has been fired for a curb will realize as much, or more, than another that has thrown out a curb, but has not been fired for it. We have also frequently found that a horse fired for a curb has remained sound, whilst in the course of a twelvemonth the has thrown out a curb on the other hock, even though he had been fired with a view of preventing it, showing that, though firing may act as a cure, it does not act as a preventative.

In the examination of horses for soundness we have not hesitated to pass a horse with a curb, requiring, however, a special warranty that should the curb cause lameness within a reasonable time, the seller shall be responsible.

(66.) PAGE 268.—BOG SPAVIN.

Our observations under the head of thorough-pins equally apply here; only that bog spavins are generally more serious, the capsular ligament having a larger amount of surface at the lower part of the hock than at the upper. It must not be forgotten that it is the joint itself that is affected, and not the parts exterior to it.

(67.) PAGE 269.—BONE SPAVIN.

This disease, as stated in the text, is one of the most serious by which the horse is affected. In the majority of cases it must be confessed that treatment does not succeed in removing lameness. When the disease is a simple ossification, on or below the small bones of the hock, the lameness may generally be removed; but it is more frequently the case that the disease extends itself between the small bones of the hock, causing ulceration of the synovial membrane and cartilage forming the articulating surfaces, and even extending to the substance of the bones themselves. When such is the nature of the case, treatment will, to a great extent, prove unavailing. The amount of enlargement that may exist, therefore, offers no criterion as to the greater or lesser seriousness of the case, for a large exostosis may occur without this ulceration, which latter may exist in some instances with very little enlargement, and, in others, none whatever. Indeed, as stated in the text, in the greater number of cases of lameness of the hind extremities, where no cause is externally perceptible, the seat of injury is the hock. In the majority of cases, the synovial surfaces of the small bones of the hock are affected, in others the larger articulation between the tibia and astragalus is the seat of mischief, the synovial membrane and cartilage being similarly affected.

With regard to the treatment of these hock cases, as we before observed, the result is extremely uncertain and unsatisfactory. If any external inflammation is present, we cannot do better than commence by abstracting blood from the vein above, and use cooling applications to the hock; after which we may resort either to the blister, the seton, or the iron. The first is the milder remedy, and if resorted to, should be repeated several times. With regard to the seton, and the iron, we have both succeeded and failed with each. It may be urged in favour of the seton that the marks and blemishes of the iron are avoided.

In otherwise incurable lameness of the hock, the operation of neurotomy has been adopted with success, excising the nerve on the inside only a few inches above the hock. The merit of this operation is principally due to Professor Spooner, of the Royal Veterinary College of London, who was the first to perform and introduce it.

(68.) PAGE 273.—CAPPED HOCK.

The actual seat of this lesion is between the skin and the tendons inserted in, and passing over, the point of the hock. The skin is very loose at this part, and to facilitate the motions of the hock there is much cellular membrane. A capped hock is therefore a serous tumour or abscess; that is, the parts are inflamed and irritated from blows, and serum is thrown out between the skin and the cellular membrane, and the tumour is circumscribed. The vice of kicking against the stall-post is, in nearly every case, the cause of this disease. We should endeavour to remove the swelling by cooling measures, followed by a blister, or the application of iodine ointment; but, if these means fail, and the tumour is large, we may pass a seton through it with impunity, for there is no joint or tendinous sheath opened. The seton should be kept in till the discharge becomes slightly purulent, or otherwise the tumour will soon fill again with serum.

(69.) PAGE 276.—GREASE.

In the treatment of this disease, and those analogous cases of humours or swellings of the legs by which it is preceded, blood-letting will be generally desirable, with a dose of physic; for it is while the system is under the cooling effects of these depletive agents that local measures are attended with the greatest benefit. Poultices, either of linseed meal or carrots, may be applied, and astringent lotions added to them, so as to remove the irritation, and check the discharge at the same time.

(70.) PAGE 289.—ACUTE FOUNDER.

Laminitis, or inflammation of the laminæ of the feet, though often occasioned by long-continued exertion on the hard road, is not produced by galloping on the turf, and indeed scarcely ever affects race-horses. Heavier breeds are more liable, and particularly when the feet are weak in proportion to the weight of the animal. When horses work on soft ground, the sole and the frog bear some proportion of the superincumbent weight, but on the hard road the shoe alone comes in contact with the ground, and consequently the crust and the laminæ bear the whole of the weight, and thus are exposed to inflammatory action from this cause. Some relief, however, is obtained by the feet being alternately in the air and on the ground; but when horses are confined for many days in a standing posture, as on board ship, the laminæ are almost constantly on the stretch; this disease, therefore, very frequently follows a voyage, and has often attacked troop horses, particularly when the voyage has been rough and of undue continuance. When, however, laminitis supervenes as a secondary disease, the prior disorder affects a similar tissue as the other; thus it is when pleurisy is succeeded by laminitis, both the pleura and the laminæ being fibrous tissues and of the same character. Such likewise is the case when acute rheumatism is the prior disease.

With regard to *treatment*, the most energetic measures must be adopted, as advised in the text. It is not, however, judicious to bleed a second time in the feet, but better to repeat the bleeding from the arms or the coronets. When a blister is applied its effects should be washed off the following day, by doing which it can be repeated several times.

Bleeding, however, is the sheet anchor, and there is generally a capability of bearing a large depletion.

(71.) PAGE 290.—PUMICED FEET.

When this disease follows that previously treated of in the preceding article, the horse is rendered completely unserviceable, the laminæ become disorganized, the coffin bone separates from the crust and descends on the sensible sole, which, unable to bear the pressure, becomes bruised and diseased, and in fact the horse is incurably lame.

When, however, a convex foot is gradual in its approach, the sole becoming *pumiced* by degrees, there is some palliation to be offered; in such instances there is usually a very weak foot previously, giving a predisposition to the disease. In this case likewise the toe of the bone recedes from the crust, a horny substance is thrown out between them, which is, however, of no use as a support; the front of the foot, usually the strongest, now becomes the weakest, and the horse goes mostly upon his heels.

A cure being out of the question we must endeavour to palliate as best we can, and this we shall do by means of shoeing. A bar shoe should be nailed on, well hollowed out, so as not to press on the sole in the slightest degree, and a rim of leather should be put under the shoe to diminish concussion, but should not extend over the sole. The bar should be put on so as to be within the eighth of an inch from the frog, by which means pressure only will be given it when the foot is on the ground, and it will thus be enabled to support a moderate share of the superincumbent weight, and so relieve the crust of it. The hoof should be frequently anointed with a mixture of tar and grease, and if the horse is rested for some time the coronets may be blistered.

(72.) PAGE 292.—CONTRACTION.

A vast amount of error has been written in various works with regard to the subject of contraction. For our own parts, we believe that it is in the greater number of instances the consequence rather than the cause of lameness; and the dissection of a great number of diseased feet has assured us that when lameness is present there is disease of the navicular joint, of the presence of which there cannot be a better proof than the symptom of pointing alluded to in the text. It is quite true that some horses will point from gait or habit without any disease being present; but when lameness exists, and the horse also points, we may take the latter symptom as presumptive evidence that the case is one of

(73.) PAGE 298.—NAVICULAR JOINT DISEASE.

This is one of the most frequent lamenesses by which the horse is affected, and one of the most insidious and incurable. It sometimes comes on suddenly from a sudden jar or strain, and then the lameness is often very severe, and there is no contraction previous to the lameness, although afterwards, from the pointing of the foot, and the consequent absence of the usual weight upon it, contraction is sure to follow; more frequently, however, this disease is gradual in its approach, the horse points previous to the lameness, and if the foot is attentively examined contraction in some degree will be discovered. Thus the symptoms are, Lameness, Pointing, and Contraction, each of which demands separate consideration, in order that we may understand the true nature of this very deceptive disease, and the more so as it has not been treated at much length in the text.

The Lameness.—The degree of lameness in navicular disease admits of a variety of shades. In some cases we find it manifested the first hundred yards only; in some it may continue for a mile or two and then go off; in others, again, it may continue throughout a journey, but not so severely as at first. This circumstance is common to some other lamenesses, but not so uniformly the case as in navicular disease. So important a symptom is it, that on ascertaining its existence it of itself leads us strongly to suspect the nature of the lameness. It is customary to say of a groggy horse, "Oh! he will go sound enough when he gets a little warm." This peculiarity, which is common to many lamenesses, but more particularly to the navicular disease, is ascribed to the attention of the horse being called away from the injured part: this in a great measure is the case, but we must add that in the disease in question the secretion of synovia becomes increased by exercise, and the horse is enabled so to dispose his weight as to rest but very lightly on the injured joint. In some cases the lameness is so slight that the utmost tact of the practitioner is required to detect it; or the horse may show it on the stones and go sound on gravel. Should the horse be slightly lame in both feet the difficulty is still greater, and he may go a long time in this state before the owner thinks him actually lame. When both feet are thus equally affected, however, the action of the horse becomes altered in proportion to the extent of mischief; he no longer bends the knee with the same freedom as before, his action becomes shorter, the heels of the foot scarcely touch the ground, and the shoe will exhibit the toe almost worn away, whilst the heels continue undiminished in thickness. These circumstances, whether one leg or both be affected, will at all times materially assist our diagnosis. After the disease has existed in both feet for a considerable period, the horse brings his hind legs under his body, and makes them sustain the greater part of his weight, and in the stable he almost constantly lies down.

Pointing.—We should be cautious of giving an opinion of the cause of lameness until we have seen the horse in the stable, where, if there be any doubt of the matter, we should leave him for a while undisturbed. In many cases, on asking the question, "Does the horse point?" the groom will reply, "Oh yes, he has done so for a long time!" The ascertainment of the length of this time will inform us how long the disease has been coming on. In other cases, on asking the same question, we are told he never points. The former reply we may generally depend on, but the latter we must never trust to; for, unless the lame foot is thrust out nearly a yard in front of the other, the groom does not consider that the horse points. In a case of this sort, (supposing all the time that it is one of navicular disease,) we shall probably find, on noticing the horse, that the affected foot is advanced in some degree beyond the other, that there is very little weight resting on it, and none whatever on the heels. In navicular disease the horse always, or at least in ninety-nine cases in a hundred, points, either little or much, although it may be unnoticed by the attendants; it is, indeed, one of the most striking characteristics of the disease. We must not, however, always conclude that because a horse points he must necessarily have the disease, although in the majority of instances we may expect its approach, either early or late; but some horses have been known to point for years without going lame: either the horse has pointed from habit, or the alteration of structure in the foot may be sufficient to occasion pointing, and yet by careful treatment prevented from being so bad as to produce lameness. Some persons having witnessed a case in which a horse may have pointed for a lengthened period without being lame, immediately conclude that it is of no consequence, thus confidently drawing an inference from the narrow limits of their own experience, and allowing it to influence their conduct. We may, however, safely aver that pointing, if a habit, is at best a wretched bad one, having so much the semblance of disease; and from its so frequently being the precursor of lameness, it materially lessens the value of an animal.

If a horse is lame and points, must we necessarily conclude that he has navicular disease? No; he may point from corns or from other injury at the posterior part of the foot, but then this pointing is different from that of navicular disease. In the latter the foot is generally set out straight, in the former it is not extended so far, but the heels are more elevated. In the former, the animal having put his foot in the easiest position, turns his attention to other objects, whilst in the latter the solicitude of the horse is evidently directed more continually to the part, and if a horse points from corns the lameness and pain are unusually severe.

Contraction.—This is a symptom that, either generally or partially, we usually find attending navicular disease. It is, however, by no means universally the case, indeed we occasionally find navicular lameness without any contraction, and, on the other hand, quite as frequently extensive contraction without any lameness whatever. Contraction is more frequently the consequence than the cause of lameness, arising as it does most commonly from resting or favouring the foot, which the lameness induces. There are different sorts as well as different degrees of contraction. Putting aside the natural oblong narrow mule's-shape foot which often exists through life unattended with lameness, we may have the heels drawn in, the crust and bars approaching with scarcely any space in the commissures, and the frog much diminished, hard, dry, and preternaturally elevated. In other cases the contraction may be only on one side, or the foot may appear altogether free from contraction, which may be only found to exist by comparing it with the other foot. There are other cases in which there may be no apparent contraction, and yet the parts are by no means in a natural and proper position; the horny sole is preternaturally arched and thick, and the consequence is, the navicular joint is driven up higher in the horny box, and instead of having a comparatively flat and elastic surface to repose on, it has a hard unyielding ridge formed by the commissures.

Having given the leading symptoms attending the disease, it would be well perhaps here to mention the morbid appearances of the joint which accompanies them, and which post mortem examinations of the malady in its different stages exhibit. Among some morbid specimens in my possession, one merely shows a slight indentation on the ridge of the navicular bone, and when recent the corresponding portion of the sinew was roughened. The horse had pointed a long time prior to his death, and was lame for a mile or so on first going off.

Another specimen exhibits holes in the navicular bone somewhat like a carious tooth, together with very diminutive bony deposits on different parts of the surface of the bone. The mare to which it had belonged had been lame for several years in both feet, which were much contracted, and got gradually worse until she was only fit to go to plough.

Another case developes still greater disease on both navicular bones, which are ulcerated in a great degree, and present also numerous long spiculi on their articular surface, besides which there is an ossification of the inferior cartilage, so that although the bones have been boiled the navicular bone rests securely on the ossified parts, which must therefore have materially saved the diseased tendon. The bones had belonged to a very old horse and favourite hunter, that had been lame for many years, and had consequently been used for agricultural labour.

Another morbid specimen is that of the feet of an old horse that had been groggy for some years. The navicular bones in both feet were closely united to the flexor tendons, and on tearing them apart the fibres of the sinew were lacerated; the greater part of the posterior surface of these bones was denuded of cartilage, and presented a rough appearance, and the bones themselves were situated higher up in the hoof than natural, assuming a more vertical or less horizontal position. Although this was the position of the bones, yet the foot by a common observer would have been pronounced well-shaped; the sole, however, I found enormously thick.

From a review of the various circumstances which attend the domestication of the horse, we may, I think, justly conclude that most of them operate in inducing the disease in question. The foot in its natural state has a disposition to contract when at rest, and expand when pressed upon. In a weak foot there is a greater tendency to spread than contract, but in a strong one we may consider these two antagonist principles as equivalent to each other. When, however, the horse becomes domesticated, every means is used to aid the contraction and to neutralise the disposition to expansion. The shoe is nailed to the foot when the latter is in its most contracted state, and the horse is confined in a stall the greater part of the day. On a sudden he is taken out of the stable, and, without having prepared his joints and limbs by preliminary exercise, he is driven as fast as he can trot for the space of an hour or upwards, on the hard road, and then during the remainder of the twenty-four hours consigned to the stable. What is the result of this unnatural system? By the joint effects of the shoe, hot litter, and standing in the stable so long, the foot so contracts that the sole is driven upwards, and with it the navicular bone, which thus, as we have before noticed, has a hard unyielding surface to rest upon; and the joint having been in a quiescent state for many hours, there is probably a diminished secretion of synovia. In this unprepared state the feet are battered on the hard road, and the result is in many cases a bruise of the synovial membrane, which may be either sufficient to produce sudden and severe lameness, or so moderate as to occasion the slightest lameness only.

So far as my experience goes, horses used for racing are not so often affected as others, and this circumstance must I think be attributed to the fact of their taking a great deal of exercise on the soft ground, where the various parts of the feet meet the soil. They are not taken out of the stable and compelled to proceed at once with speed, but even during severe training are first walked for a considerable period before they take their gallops, which thus gradually prepares the joints for the severer exertions they are about to perform. Hunters, too, as we have before remarked, although exposed to sudden concussions and severe exertions, more, perhaps, than any other horses, are yet much more exempt from the disease than horses used on the road. How is this? but because they take much walking exercise every day, and particularly on the day of hunting, before their severe exertions commence, and these exertions are taken, in great measure, on the soft soil, where the frog, bars, and sole all meet the ground, and greatly assist in diminishing concussion and preserving the feet in a healthy state. It is a fact, too, that few will gainsay who have made extensive observations, that when hunters are affected with navicular disease, it is much more frequently than with other horses attended by sudden and acute lameness: the horse goes out perfectly sound and comes home dead lame.

From these circumstances we are disposed to draw the following conclusions:—

First—That navicular lameness may be produced suddenly by a bruise on the synovial membrane, without any predisposing cause existing, but that this is by no means frequent.

Secondly—That well-bred horses with strong feet are most subject to the disease.

Thirdly—That the lameness is usually preceded by an alteration in the structure of the foot, whereby the navicular bone is somewhat displaced, and has a hard unyielding surface to rest on instead of an elastic cushion.

Fourthly—That this contraction may be either apparent or obscure.

Fifthly—That in feet thus contracted the lameness itself is yet produced by a sudden bruise.

Sixthly—That contraction is not a direct cause of lameness itself, although usually considered so by authors, inasmuch as the dissection of morbid feet clearly developes the disease elsewhere; but that although not an exciting cause, it is yet a predisposing agent.

Seventhly—That contraction is more frequently a consequence than a cause of lameness, being produced by any circumstance that induces the horse to abstain from bearing his weight upon the foot.

Treatment.—In endeavouring to cure the navicular disease, much, indeed almost everything, will depend on the length of time the horse has been lame. If the lameness came on suddenly, and but a short time has elapsed, we may then set about our treatment with a reasonable prospect of success; but if, on the other hand, the mischief has been slowly coming on, and preceded by pointing for some time, we may then afford some palliation, but a *permanent* cure we are seldom able to accomplish. In seeking a remedy our endeavours should be directed, first, to the removal of the inflammation in the joint; and, secondly, to the restoration of the various parts of the foot to their natural and proper position. If the injury has been suddenly produced our treatment will be principally confined to antiphlogistic measures.

The shoe being removed the foot must be pared out and the sole thinned, more particularly that part opposite the navicular joint; the commissures should also be well cut out and thinned. This being done the foot must be bled freely from the toe; four quarts of blood may be taken, and the foot should be then placed in a linseed-meal poultice, or one made of bran and meal. The poultice should be wetted several times and changed once a day, and the bleeding may be repeated in the course of a few days, if required. The poultice is to be continued for eight or ten days, and then, when the utmost benefit has been derived from it that it is capable of affording, we may have recourse to counter-irritation.

The importance of venesection in every case of navicular disease must be apparent to every one, for there can be no case requiring treatment but what must be attended with some degree of inflammation, and in some cases the injury may be confined to inflammation alone. Where we have reason to infer that such is the case we may indeed confine our treatment to bleeding and poulticing. The benefit of the poultice is inferior only to venesection. It softens the horn, changing it from a hard, dry, and almost inelastic substance, to a soft, yielding, and elastic material. The degree of paring that may be necessary must depend on the alteration of structure that has taken place in the foot.

Having pushed our antiphlogistic treatment as far as we well can, we may next seek the aid of counter-irritation. Shall we blister the coronet or insert a frog seton? The latter is I think in every respect preferable; we create artificial inflammation and suppuration very near the seat of the disease, and we may keep this up almost as long as we please; a month, however, of active suppuration is generally long enough. The only objection to the seton is that the horse must be kept in the stable; he cannot be turned out or into a soft moist place during the time it remains in the foot.

Before the seton is inserted a shoe should be placed on the foot, nailed on the outside quarter only, which will much assist the expansion of the foot.

By the judicious employment of the treatment we have recommended, varied or modified according to the nature of the case, we may in many instances effect a cure; but a love of truth obliges us to confess, that in the majority of cases, taking them as they come, no treatment will succeed.

In chronic cases of navicular disease, in which there is no probability of effecting a cure, and but little of relieving the animal to any considerable extent, we have to determine whether we shall work the animal lame (if he is able to work at all), or remove sensation from the feet by the operation of neurotomy.

It is a matter of much consequence that when a horse is submitted to the preceding course of treatment, every chance should be given it by allowing a long rest, viz., from two to four months.

(74.) PAGE 299.—SANDCRACK.

When lameness attends sandcrack it is owing to the crack extending from the horn to the quick above it. If the horse is worked on, this injury is repeated again and again until the coronary substance becomes so injured as to produce a false quarter. When a horse throws out a sandcrack he must be rested a month or more in order to effect a cure, to do which effectually the foot should be poulticed for a week in order to encourage the growth of horn, and the coronet for the same reason may be stimulated. In the course of a month the sound horn will be grown down for the space of a quarter of an inch, and then, and not till then, the firing iron should be drawn transversely above the crack, so as to cut off the communication between the fissure and the sound horn above, which will gradually grow down. A plaster of pitch or shoemaker's wax may then be placed on the crack, and a strap fastened round the foot, so as to prevent too much motion taking place. A bar shoe is indispensable, in order that the weak quarter may be secured from the pressure.

(75.) PAGE 302.—QUITTOR.

This disease is much less common than it used to be, in consequence of the improvement in shoeing and the discontinuance of calkins. It is generally caused by a tread or external bruise, the injury inflicted being deep seated. It is also often produced by a festered corn, the matter from which having no depending opening, spreads upwards between the horn and the bone, and forms sinuses about the coronet in different directions, and under and within the cartilages of the foot. With regard to the cure, the first thing is to poultice well, after which an injection of the solution of sulphate of zinc will often effect a cure. In other cases it is necessary to lay open the sinuses or insert setons, bringing them out in some depending position. We have successfully inserted setons at the coronet, bringing them out severally at the heels and the bars of the foot. When the cartilage is in a state of caries it is desirable to produce a slough by means of corrosive sublimate. By the adoption of these remedial measures a cure can generally be effected; for our own part, we have scarcely ever yet met with a case of quitfor which we have been unable to cure, though sometimes the treatment has been very protracted and troublesome.

(76.) PAGE 311.—SHOEING.

There is no subject relating to the horse which amateurs profess to know so much about as that connected with shoeing. One gentleman requires the sole and other parts of the foot to be pared extremely thin, and the toe very much shortened, no matter what sort of foot the animal may have; another forbids the use of the drawing knife, wishes the sole to remain unpared, and views with holy horror the slightest attempt to remove any ragged portion of the frog; the one is a blind worshipper of art, the other a zealous votary of nature; each prides himself on his superior knowledge of the foot, and regards the slightest opposition to his opinions as the vapouring of ignorance and prejudice. Similar contrarieties prevail with regard to the sort and shape of the shoe. One insists on having a shoe with a very broad web, no matter what sort of foot the animal may have, or work he may have to perform; another, with an equal indifference to circumstances, demands an extremely narrow shoe; one requires very thick heels, another the heels of the shoe to be as thin as a shilling, or he would work his horse with tips, whether on a sandy or a flinty road. Then one will require the shoe to be kept considerably wider than the foot, to the great danger of the animal casting or throwing the shoe, under the absurd idea that it will prevent or relieve contraction; and will not hesitate, as the writer has frequently known, to condemn the smith who presumes to pay some little attention to nature in the matter. As well might the wearer purchase a hat much larger than his head, with the expectation that his brains will enlarge so as to fill it. Some amateurs will allow the heels to remain untouched, but order the toe to be shortened considerably at every shoeing, and then anathemize the unfortunate smith when he finds that his horse goes tender in consequence.

Then, with regard to the nailing on, some require the nails to be driven as low down, and others as high up, as possible; some will have the shoe fastened on with abundance of nails; others, inspired with some novel ideas or new-fashioned doctrines, propagated perhaps by "*Miles's* boy," as the saying is in some countries, will eschew one half the nails, and scarcely believe the other half essential for the security of the shoe.

Amidst such a chaos of opinions who can wonder at the perplexity of the unfortunate operator, who yet with all its difficulties regards the fitting of the shoe to the foot a far easier task than that of fitting it to the ideas of the master. Far be it, however, from our wish to discourage the interference of the owner in the matter of shoeing, if he will but seek his information from proper sources, and when he puts it in practice pay some little attention to the rules of nature and the endless diversity of horses' feet. By so doing he will be able to put a wholesome restraint on the conceit of the groom or the coachman, who often regard themselves as unerring judges on all matters connected with the subject. The great error amongst amateurs is in not making due allowance for the great variety in horses' feet, which differ so greatly that it would be a gross absurdity to shoe all alike. Some horses have so strong a development of the horny structure of the foot, that a considerable portion requires to be removed at each shoeing, whilst others require, if it were possible, horn to be added, for in them the wear is greater than the growth. Some horses have a tendency to high heels, others to low ones; some require the toe of the foot to be reduced every month, in others there is not a particle to spare. In some horses the frog is so large and gross that it requires considerable paring, in others it requires to be carefully removed. We find the sole in some horses so thin and flat, that the shoe must be seated considerably to prevent its pressing on the sole, whilst in others the sole is so strong and concave, that it is a matter of indifference whether the shoe is seated at all, except for the purpose of rendering it lighter. With this endless diversity in horses' feet, how is it possible to lay down any fixed plan for shoeing all horses alike? All that can be done is to take an average foot, and consider what sort of shoe is best suited for it, and so to alter or modify such shoe as to adapt it to other feet according to their peculiarities.

There is no better shoe for a saddle or light harness horse on the road than one of moderate weight, rather less than an inch in breadth, seated on the foot surface, with five nails on the outside quarter and toe, and two or three on the inside and near the toe. A clip at the toe and another at the outer quarter will be a useful addition; and if the shoe is required to be light, then one or even two nails may be dispensed with. By means of such a shoe the foot will be secured from contraction, and the inside heel in great measure from corns. The shoe should be of equal thickness at the heel as at the toe, and the web should be narrower at the former than the latter situation. If the heels of the foot are very low it will be prudent to make the heels of the shoe somewhat thicker than the toe, and vice versâ. If the sole is inclined to be flat, it will be desirable to make the shoe somewhat broader in the web, unless a leather sole is used, which for such feet is extremely useful,—indeed a leather sole is at all times desirable during the summer season. It secures the sole from injury from stones, and saves many a fall and broken knee; it materially lessens concussion, diminishes both the wear of the horn and of the shoe, and keeps applied to the sole a stopping of grease and tar spread on tow, which preserves the horn in a moist and healthy state. It is objectionable for hunters by rendering the shoes more liable to cast; and if required on account of lameness, for horses going on the soft ground, it should be merely a narrow rim of leather between the bearing part of the shoe and the foot.

(77.) PAGE 320.—OPERATIONS.

For the operations of nerving, firing, and many others, where it is necessary to be exact, we prefer casting the horse, as we have him then completely in our own power; whereas, by the other restraints, the operator is in great measure at the mercy of the animal, who can effectually resist if he pleases. Besides which, in a case of lameness, there is great danger of injury arising from the plunging of the animal. If a soft bed is made, with dung at the bottom and straw at the top, there is but little risk in casting. During the last nineteen years, in many hundreds of operations, we have only met with two cases of injury from casting, and these were in very old horses, whose spines proved to be anchylosed or set, and were thus much more liable to fracture. Where the object is to perform an otherwise painful operation without the infliction of pain, the use of sulphuric ether or of chloroform may be had recourse to. It is unnecessary to trace the history of these substances, so much having been of late written on the subject. The writer has used both with success, but the chloroform is preferable from its greater strength. The horse, however, requires a large quantity before the powers of sensation are temporarily destroyed, viz., from two to four ounces. It may be applied by a simple sponge, but better by means of apparatus, by which expiration is permitted, and at the same time sufficient air admitted to prevent dangerous effects following. The chloroform may be administered while the horse is in a standing position, and in some cases he will quietly fall or lie down; but as, in other instances, he will resist with determination, and stand even after sensation is gone, it is the better plan, in order to save the chloroform, and shorten the time during which the horse is under its influence, to cast the animal first, when the chloroform can be immediately applied, and the operation commenced as soon as sensation is removed. Or the chloroform can be applied when the horse is in a standing position, and the hobbles affixed at the same time, when, by means of the latter, the animal can be quietly thrown as soon as the former begins to act. This method will effect a saving of time. The use of chloroform is more suitable for short operations, such as nerving or castration, and the removal of tumours, than for those occupying considerable time.

(78.) PAGE 322.—BLISTERING.

There has been a vast deal of puffing and humbug mixed up with the subject of blistering:—ointments and liniments have been sold under various captivating titles, and professing to be so amiable in their effects, as to require no tying up of the horse's head when the animal is submitted to the operation. Now, it should be borne in mind, that the effect of a blister being to stimulate violently the sensitive cutis and cause it to throw up the scarf skin in the form of bladders, this cannot be accomplished without pain and irritation. Of course, if from the weakness of the application a lesser effect is produced, the irritation is so much the less. Cantharides is the base of nearly all blisters, and its action is pretty much the same, whether applied in the usual blistering ointment or in some unguent of peculiar and astonishing efficacy, distinguished alike for the most opposite virtues,—combining the strength of the lion with the mildness of the dove. It is a fact that nine horses out of ten will not attempt to blemish themselves; and it is the knowledge of this fact that induces the puffers of these blisters to state that the animal does not require his head to be tied up. The careful veterinary surgeon will, however, use proper precautions in all cases, though only one in ten may actually require it. The writer has known a horse tear up the stones under his feet from the irritation produced by James's blister.

(79.) PAGE 324.—FIRING.

Notwithstanding its seeming cruelty, it cannot be denied that this operation often succeeds when all other methods of cure have failed. We have little or nothing to add as to the mode of performing the operation, only that we prefer the lines to be made in the oblique or feather form, simply because it is as effectual as the perpendicular firing as regards the bandage, and leaves a lesser blemish as the lines become covered by the hair growing from above.

(80.) PAGE 326.—SETONS.

We are more favourable than our author to the use of setons; they are equally effectual, and far more cleanly, than rowels, and a deep-seated and continued action may be kept up with little or no pain to the animal. They are often preferable to other methods of treatment for diseases of the hocks, and we have found the use of the frog seton in many instances extremely beneficial.

(81.) PAGE 338.—VICIOUS TO CLEAN.

In some instances the skin is so irritable that the horse really endures a great deal of misery every time he is cleaned, besides expending a great deal of muscular exertion needlessly. The remedy for this is very simple; instead of being curry-combed and wisped, he should be simply washed over with warm water on his coming in warm from a journey, then gently scraped and covered with a rug. The warmth of the body will very soon dry the skin.

(82.) PAGE 338.—VICIOUS TO SHOE.

This is certainly a very bad vice, and one, indeed, that very materially diminishes the value of the horse, for it is a habit which generally gets worse at each time of shoeing. It is not so much the kicking of the horse that is to be feared, but the animal will bear his whole weight on the foot required to be shod, so that the smith is unable to lift it up, or afterwards to support it; besides which, the animal will keep continually kicking or endeavouring to get the foot away, to the imminent danger of the limbs of the unfortunate operative. This deplorable and vicious habit is greatly increased, if not altogether produced, by rough usage at the early shoeings, and it generally gets worse at each time of shoeing, so that the horse is often rendered at last completely worthless.

(83.) PAGE 341.—NOT LYING DOWN.

It should not be forgotten that the basis of support afforded by the four extremities is so considerable in the horse that he is able to sleep in a standing position, and we have known some horses preserve their health, strength, and condition, although they have never been known to lie down. At the same time it must be confessed that an animal that will quietly lie down and take his rest generally preserves his condition, and is better fitted for exertion.

(84.) PAGE 342.—SHYING.

This vice or habit, for it ranges between the one and the other, exists in every variety of degree. There are more horses that shy than do not: when the practice exists in a slight degree it is a matter of no consequence, but, when the animal, instead of merely looking at the object of alarm and dwelling a little in his pace as he approaches it, stops suddenly, or turns round, or swerves considerably, the habit becomes a dangerous vice, and is exceedingly objectionable. There is more affectation than real fear about this habit, the horse making use of every unusual object as an excuse for the indulgence of his skittishness, or his obstinacy. There are also some strange eccentricities connected with it. Horses will often pass a frightful object without the least fear; but if, perchance, there is a puddle in the road, or a stick of timber lying beside it, imagination appears to paint the object in the most hideous colours or portentous forms. Horses shy most in the country, where there are but few objects to meet; and they rarely exhibit this propensity in the crowded streets of the metropolis. The objects are there far too numerous to allow an excuse for shying, or would soon weary them of the habit; indeed, the very best method of curing the vice is to use the animal in crowded streets. Though shying is often connected with imperfect vision, it is rarely produced by actual disease, and, therefore, its existence does not augur unsound eyes. Too great convexity of the eye is certainly often connected with shying, so that objects are refracted too quickly, and thus are imperfectly painted on the retina.

Shying horses are frequently made much worse by rough usage; instead of which they should be always treated with gentleness and firmness, which system, in many instances, will succeed in effecting a cure.

(85.) PAGE 361.—SOUNDNESS.

Capped hocks.—In nine cases out of ten these enlargements are occasioned by kicking in the stall, a vice altogether different from that of spitefulness, which appears to arise more from restlessness than anything else. The swelling consists of an effusion of serum or water in the cellular bag which is found beneath the skin at the point of the hock, placed there for the purpose of giving facility of motion.

It is never occasioned by strains, therefore, although a sad blemish, it should not be regarded as an unsoundness, unless accompanied with other indications of disease.

(86.) PAGE 362.

Roaring, *wheezing*, and *whistling* may be considered as modifications of the same disease, viz., an obstruction to the passage of air to and from the lungs; and, as the nature and amount of this obstruction necessarily varies, so must the noise thereby produced, and which is consequently expressed by the terms in question; all, however, being decidedly *unsoundness*.

Grunting is the noise which many roarers will evince when suddenly alarmed by a real or pretended blow. It is the common horse-dealer's method of discovering a roarer, but by no means one that can be depended on, as many moderate roarers, particularly if they have lately become so, will not grunt. With regard to high-blowing, we by no means consider it an unsoundness, understanding by this term, however, the noise, often very considerable, which some horses make on being first excited, or put into motion. This noise is produced by the false nostrils, which either possess greater laxity than common, or else it is owing to the nervousness of the horse. It begins at once if the horse is excited, and, instead of increasing with exertion, like roaring, it diminishes or goes off. This is, or ought to be, the proper test of soundness. Within a few hundred yards of the place where we are now writing, there is an animal which, eight years ago, came under the writer's notice for examination as to soundness. He came with the character of a roarer, but was reported as sound, though an unpleasant high-blower. We have watched his career through no inconsiderable part of a horse's life, and he has proved, in many a brilliant run, the truth of our decision, that he was no roarer. This horse would make a fearful noise, resembling the puffing of a steam engine, if suddenly excited or hastily kicked into a gallop; but the farther he went, the less the noise became; and sometimes, if quietly ridden and his speed gradually increased, he would settle down to his work in a business-like style, and, in either case, leave the true roarer far behind.

Broken wind is of course decided unsoundness, and equally so is *thick wind*, or quickened respiration, which often arises from consolidation of a portion of the lungs, and sometimes merely from thickening of the membrane of the air passages.

(87.) PAGE 362.

Crib-biting has often been the subject of dispute, as to whether it constitutes unsoundness or not, which is not to be wondered at, seeing that many crib-biters will perform their work for many years without hindrance or inconvenience. Crib-biting is now, however, regarded as an unsoundness, on the principle that, though at the present time the horse may be equal to his work, yet, at a future period, it may render him unequal to its performance, by causing indigestion, loss of flesh, and weakness. It is better that the question should be thus set at rest, as the value of the animal is very materially diminished by being a crib-biter, which is owing not so much to real injury, as to the disagreeable habit, and to the fact that if the animal is in a stable with other horses they are very likely to learn the habit.

Wind-sucking must come under the same rules as crib-biters, which resembles it so far as the swallowing of air is concerned, the animal, however, being enabled to do it without the necessity of laying hold of the manger.

(88.) PAGE 362.

Curb constitutes unsoundness, unless it is well known that the horse has stood the ordeal of work for some months since the curb was thrown out, or any treatment adopted for it. As this information, however, can seldom be satisfactorily obtained, the possible effects of a curb should be guarded against by a special warranty.

(89.) PAGE 363.—CUTTING.

We cannot agree with the text in considering this an unsoundness. It is a visible defect, and therefore can readily be observed, and pointed out, and objected to, in proportion to the amount of the evil, which may be very severe and unlikely to be remedied, or slight, and owing either to improper shoeing, or youth, awkwardness, or weakness. To consider it, therefore, as an unsoundness, there being neither alteration of structure nor function, would be to open the door to perpetual disputes, and render the already vexed question of soundness stiil more vexatious. At the same time, if the cutting is considerable, and evidently arises from naturally defective action, and is of such a nature as not to admit of a remedy, we should not hesitate, in such a case, to pronounce the animal unsound.

(90.) PAGE 363.—ENLARGED HOCK.

The greater number of these cases, arising as they most frequently do from strains, we should consider as unsoundness, even although the probability may be that the horse will stand work without lameness. There is weakness of the part, and a possibility of lameness. There are, however, other cases in which the enlargement may be in the skin, or immediately under it, or on the outside of the bone, such cases being often produced by kicks or blows, or other external injuries. There are many such cases that we should regard as blemishes, but not as unsoundness.

(91.) PAGE 363.—THE EYES.

All internal diseases of the eye, or the remains of such diseases, constitute unsoundness; and even although no mischief can be discovered at the time of sale, yet, if inflammation can be proved to have existed previously, and such inflammation subsequently recurs, the horse is returnable. As, however, it is extremely difficult to obtain such proof, the most particular care should be taken with regard to an examination of the eyes. Distinction, however, must be made between those streaks or opaque spots often seen on the cornea alone, and without the axis of vision, and which invariably arises from blows or other external injuries, and which, although amounting to a blemish, does not constitutes unsoundness. There are also occasional specks deeper in the eye, about the size of a pin's head, evidently on the surface of the crystalline lens, and not in its body. These false cataracts, as they may be called in contradistinction to true cataracts, are very frequently absorbed, and do not increase or injure vision. When, therefore, the examiner can satisfy himself that such is the nature of the specks in question, he will be justified, whilst pointing out their existence, in deciding in favour of soundness of the animal.

We cannot by any means agree with the doctrine implied in the text, that a blind horse is not returnable. If the horse is warranted sound, and proves to be blind, the warranty is broken, and the horse is returnable. Many purchasers of horses know no more about a horse than a horse does about them, and cannot be supposed to be capable of discovering the animal's defects, and they have a right to consider the warranty as their protection. The writer himself remembers, many years since, riding a horse twenty miles on a turnpike road, without knowing that the animal was blind. It was a case of amaurosis; the eye was clear and apparently free from disease, the animal went safe straight, and well, and he could scarcely believe it, the next morning, when he found that the animal was stone blind.

If, however, the horse is bought without a warranty, the defect being patent, the horse is then not returnable on the ground of fraud.

(92.) PAGE 365.

Blood Spavin is certainly unsoundness, unless extremely slight, although in the majority of cases it does not cause lameness.

(93.) PAGE 365.—SPLENT.

We do not think the situation of this tumour has so much to do with the existence of lameness as is generally imagined. The lameness is occasioned by the tension of the periosteum, or covering of the bone, which has not had time to accommodate itself to the bony swelling beneath it. All splents, therefore, which evince tenderness on being pressed should be considered as unsoundness, and, indeed, all splents on horses under six years of age should be guarded against by a specific warranty, though no lameness or tenderness may exist. In older horses this precaution is unnecessary.

(94.) PAGE 365.—THICKENING OF THE SINEWS.

All enlargements of the sinews or ligaments, unless evidently produced by blows, constitute unsoundness. It is an old but mistaken idea, that the enlargement of sprung sinews, as it is termed, exists in the cellular membrane. It is the substance of the sinews themselves that becomes thickened.

Thorough-pins, unless they are very slight, ought to be considered in the same light as *Bog Spavin*, which they resemble in their nature though not in situation. They indicate weakness of one of the most important oints in the body, though lameness rarely attends it.

(95.) PAGE 366.—THRUSH.

We cannot consider thrush as invariably unsoundness, as it may often be cured. In bad cases, of long standing, we are justified in considering it as unsoundness.

(96.) PAGE 366.

We cannot conclude our notes on the subject of soundness without recommending to every purchaser requiring a sound horse to expend 10*s*. in having the horse examined by a skilful veterinary surgeon before he completes the purchase. From the wish to save this little expense, endless disputes, annoyances, and lawsuits have been the consequence. It too frequently happens that the purchaser does not seek professional assistance until either he suspects unsoundness, or is displeased with the animal in some other respect, and hopes the certificate of the veterinary surgeon will enable him to return the horse. This is obviously unfair to all parties, and the too cunning purchaser is often punished for his selfishness, for, although the veterinary surgeon may pronounce the horse unsound, he is unable, from the delay that has elapsed, to say that the animal must necessarily have been unsound at the time of purchase. It is worthy of remark, that the New County Courts open facilities for the recovery of damages for selling unsound horses, for although the amount must not exceed twenty pounds, a sum that rarely equals the cost of a horse, yet it should be borne in mind, that it is not essential to return the horse, but, notice being given, the animal may be sold by auction, and the action brought for the difference between the amount the horse first cost and that he afterwards sold for.

Thus actions may be brought for amounts, the lowness of which would altogether preclude a suit in the higher courts. There is, however, one disadvantage attending these County Courts, which is, that neither the judge nor the jury are at all times so well versed in horse matters as it is desirable for the ends of justice that they should be. Thus, in a case which recently came under the notice of the writer, a mare was sold warranted sound, but was clearly proved to be otherwise, on the evidence of two veterinary surgeons, in consequence of an enlargement of the flexor tendons. The animal was tendered to the seller and refused, after which she was sold by auction, repurchased by the buyer, and an action brought for the difference, the amount of which was thus brought under twenty pounds. The purchaser foolishly used the mare after he had tendered her back, and before she was put up for auction, and on this ground, (although no injury arose from thus using the mare,) and also that of his having repurchased her, the jury, at the instigation of the judge, returned a verdict for the defendant, thus aiding or abetting that fraud which these courts were instituted to prevent or to punish. It should, however, be observed, that it was not the usual judge, who was, in fact, prevented by illness, but a barrister who sat for him.

(97.) PAGE 373.—PORES OF THE SKIN.

It is stated in the text, " we are not aware of any medicine that will cause perspiration, as in the human subject." Although the same medicines will not produce this effect, yet those that come under the designation of diffusible stimulants will. Thus, a large dose of spirit of nitrous ether will often produce perspiration; and so, likewise, will the spirits of hartshorn, and even vinegar.

(98.) PAGE 373.—MOULTING.

We must protest against the idea that a horse with a long coat, however fed and trained, is in as good condition, or capable of as great exertion, as a horse with a sleek glossy coat. As well may a man with a great coat on attempt to run a race with another stripped almost to the skin. This fact it is which has led to the now general practice of clipping or singing, by which the coats of coarse-skinned horses are removed, and the horses put on a par with sleek-skinned animals, without the necessity of very hot stables, and a long course of preparatory treatment. The advantages of clipping are great; perspiration is considerably lessened, the horse is soon brought into condition, and grooming is greatly facilitated, without unnecessary irritation; indeed, the quickest method is to wash the skin while the animal is somewhat warm, with warm water (and soap if necessary), and then scrape the skin, and throw a horse-cloth on the body, which, in the course of ten minutes, will be found dry and comfortable.

(99.) PAGE 375.—COLOUR.

We do not consider that the size, conformation, and qualifications of horses depend so much on the colour as the text would imply. We have found both good and bad horses of every colour, and the only rule we can admit as correct is, that certain colours denote deficient breeding, and therefore such animal is not likely to be so good as he looks, but is probably deficient in bottom or the powers of endurance. These colours are black, which prevails so much with cart-horses, and sorrel, dun, piebald, &c.; the possessors of which come from the north, and possess no eastern blood. Black horses, unless evidently high bred, are very often soft and sluggish, with breeding insufficient for their work; the pedigree of the majority of them may be dated from the plough-tail, whatever admixtures there may have been since. White hair denotes a thin skin, which is objectionable, when it prevails on the legs of horses, as such animals are more disposed to swelled legs and cracked heels than others. Bay horses with black legs are greatly esteemed, and yet we have known many determined slugs of this hue. Their constitution is, however, almost invariably good. Chestnut is the prevailing colour with our race-horses, and consequently chestnut horses are generally pretty well bred, and possess the good and bad qualities which obtain most amongst thorough-breds. The Suffolk cart-horse is also distinguished by his light chestnut colour; and it is no small recommendation to find that this breed has, for several years past, carried away the principal prizes at the annual shows of the Royal Agricultural Society of England.

Grey is a very good colour, and one which has become very fashionable for carriage and phaeton horses during the present reign. Her Majesty's ponies, as they are still called, although they have increased in height from thirteen to fifteen hands, are beautiful specimens of this colour, and have rendered the colour fashionable for harness purposes. These horses have a considerable admixture of eastern blood, and most of them are immediately derived from an Arab or a Turkish horse. This, indeed, is the principal or only use of the eastern horse in this country. It is vain to expect any improvement in the speed of our race-horses from foreign admixture, for every attempt of the kind for some years past has been unsuccessful. The circular carcase, arched neck, good shoulders, and fore legs, high and excellent trotting action, are, however, qualifications which our thoroughbreds cannot supply, and are truly valuable in animals required for getting carriage-horses. The white Arabian horse is, therefore, the very animal required for getting phaeton horses, and, if put to large mares, are also well adapted for perpetuating handsome and valuable carriage-horses. There are also some excellent cart-horses of a grey colour; some of massive proportions, and others of moderate size, and more active. The iron greys and roans are generally cleaner about the legs, and more compact than the mottled greys.

(100.) PAGE 378.—MANGE.

We have only to remark, that the administration of mercurial physic requires extreme caution in this disease. We have known horses very low in condition killed by this means, and we doubt the necessity of the purge. Topical treatment is the principal remedy, and it is also well to administer sulphur internally at the same time.

There is a disease very much resembling the mange, which we occasionally meet with. The horse is affected with the most violent itching, and the hair is often rubbed off, but the skin does not become wrinkled, as in mange. Though this disease often appears to yield to the same topical treatment as the mange, yet, in some instances, it is incurable, and continues through life.

(101.)—MEDICINES.

We have little to add under this division of the work. The Pharmacopœia in the text was cautiously written, and is for the most part correct.

PAGE 386.

Camphor is a sedative and slight narcotic, and, as such, may be exhibited in fever balls with advantage. It has also been found useful, combined with opium, in relieving the spasms of locked jaw.

Chloroform, or the perchloride of formyle, has been found to be a better anæsthetic agent than sulphuric ether, and has also been used internally for spasms of the bowels. The objection to its use as a destroyer of sensation is the quantity required to be taken, amounting, indeed, to several ounces. The writer has employed it successfully in many operations.

PAGE 394.

Iodine is employed in various forms. In that of iodide of potassium it is best administered internally, as a promoter of absorption. Combined with the sulphate of copper it forms a powerful and useful tonic; whilst in the form of iodide of mercury, and combined with lard or palm oil, it becomes a powerful blister, and an useful promoter of absorption.

PAGE 399.

Sedatives.—To the list enumerated in the text may be added the extract of belladonna, or the deadly nightshade, which is given in doses of two drachms.

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